31761 11765378 2

CA1
IST
-1995
C16

GOVT

Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

https://archive.org/details/31761117653782

CA1
IST
-1995
C16

Government
Publications

(2)

CANADA'S PUBLIC LIBRARIES

AND THE INFORMATION HIGHWAY:

A REPORT PREPARED FOR INDUSTRY CANADA

By Stan Skrzeszewski,
with assistance from Maureen Cubberley, Mary Jane Quinn, Barbara Clubb, Greg Buss, Serge Lavoie.

CANADA'S COALITION FOR PUBLIC INFORMATION
AN INITIATIVE OF THE ONTARIO LIBRARY ASSOCIATION

March 28, 1995.

CONTENTS:

1. INTRODUCTION

2. PUBLIC LIBRARIES - STATISTICS

3. LIBRARIES AND THE INTERNET

4. LIBRARIES AND FREENETS

5. THE COSTS OF CONNECTING PUBLIC LIBRARIES TO THE INTERNET

6. ISSUES

7. THE ROLE OF THE NATIONAL LIBRARY OF CANADA

8. THE ROLE OF THE FEDERAL GOVERNMENT

9. RECOMMENDATIONS

10. THE NEXT STEPS

Appendix "A": Provincial and Territorial Reports.

I. Alberta
II. British Columbia
III. Manitoba
IV. New Brunswick
V. Newfoundland
VI. Nova Scotia
VII. Newfoundland
VIII. Ontario
IX. Quebec
X. Saskatchewan
XI. Yukon
XII. North West Territories

Appendix "B": National Library of Canada's Resonse to the CPI Questionnaire

Appendix "C": A Study to Examine Public Libraries and Community Information Centres as Public Access Points to the Information Highway.

Appendix "D: Bibliography

LIBRARY

LIBRARY
FEB 13 1970
UNIVERSITY OF TORONTO

AWQ 8189

1. INTRODUCTION

The Coalition for Public Information conducted this study which reviews the current state of library networking in Canada and begins to determine the costs involved in providing a complete networked library infrastructure in Canada. This study was conducted for Industry Canada which provided some of the support for this project.

The Coalition for Public Information worked closely with the members of the Provincial and Territorial Library Directors Council in order to obtain specific information as to the current state of library operations and networking in each province and territory. The Coalition also worked with the Council of Administrators of Large Urban Public Libraries (CALUPL) to get appropriate feedback on the state of readiness of the largest urban libraries in Canada.

The Coalition sought input from the National Library of Canada to determine the current state of library networking through the National Library and to review the existing and planned linkages between the National Library and the public libraries of Canada.

The Coalition for Public Information (CPI), an initiative of the Ontario Library Association, is a national coalition of organizations, public interest groups, and individuals whose purpose is to foster broad access to affordable, useable information and communication services and technology. CPI provides an effective grassroots voice for equitable and affordable access to the benefits of telecomputing technology in the Information Age.

The Coalition for Public Information (CPI) was formed in November of 1993 in order to ensure that the developing information infrastructure in Canada, the so-called "Information Highway", serves the public interest, focuses on human communication, and provides universal access to information.

The objectives of the study are to begin to examine:

- the costs involved in providing a `complete' networked public library and community information centre infrastructure in Canada;
- the costs in making community-based networked services available to all Canadians through the public library infrastructure;
- the role government could/should play in supporting this approach to networking all Canadians.

This introductory study:

- initiates the development of a strategy and action plan to `network' all public libraries and community information centres in Canada, and to open the infrastructure, along with select services, to the public.
- begins to identify the operational and capital costs involved in such an initiative, and the possible funding and other support mechanisms to be used.
- includes a profile of the public library in Canada and their access potential and current readiness to serve as public access points to the information highway.

1.1 THE TEAM

The Coalition identified a team of professionals to assist with this study. The team brought substantial relevant experience to all facets of the project.

The primary team consisted of:

Stan Skrzeszewski, Principal
ASM Consultants, London, Ontario

Gregory Buss, Chief Librarian
Richmond Public Library, Richmond, British Columbia

Barbara Clubb, Director
Libraries and Community Information Branch
Ontario Ministry of Culture, Tourism and Recreation
Toronto, Ontario

Maureen Cubberley, Deputy Director/Program
Ontario Library Association, Toronto, Ontario

Serge Lavoie, Director of Operations
The Association of Community Information Centres in Ontario
Toronto, Ontario

Jocelyn LeBel, Director
New Brunswick Library Service
Fredericton, New Brunswick

An advisory council was also established. The members of the advisory council were:

Brenda Oziewicz, Head, Library Services
Department of Indian Affairs and Northern Development
Whitehorse, Yukon

Hazel Thornton-Lazier
Canadian Library Trustees Association
East York, Ontario

John Tooth, Instruction Resources Branch
Manitoba Education and Training
Winnipeg, Manitoba

Virginia Van Vliet, Branch Manager, Brentwood Library
Etobicoke Public Library
Etobicoke, Ontario

Michael Williamson, Coordinator of Networked Services
Information Technology Services
National Library of Canada
Ottawa, Ontario

2. PUBLIC LIBRARIES - STATISTICS

Public libraries are located in almost every community in Canada, and are obvious public access points to the information highway, and sources of information and training in its use. Librarians have long been early adapters of the new information technologies and networks. The chart below shows that public libraries are to be found everywhere across Canada and that they are available to a high of 100% of the population in Newfoundland and Nova Scotia to a still very significant 74% in New Brunswick.

2.1 Population Served

Province or Territory	Population Served by Public Libraries	Percentage of Population Served
Alberta	2,459,937	95.5%
British Columbia	3,213,327	97.77%
Manitoba	86,881	81%
New Brunswick	542,271	74.9%
Newfoundland	568,474	100%
Nova Scotia	936,700	100%
Ontario	9,690,230	99.91%
Prince Edward Island	-	-
Quebec	-	-
Saskatchewan	956,578	96.7%
Northwest Territories	-	-
Yukon	31,670	99%

2.2 Degree of Automation and Networking.

The degree of automation and networking varies from province to province to territory. Yet, in each jurisdiction major planning and implementation processes are under way to automate library functions and to make them accessible electronically through networked access. The following chart and reports highlights some of this development activity. There is no doubt that public libraries are moving to provide access and information to the information highway. These activities are being hampered by the current economic situation especially in the public sector and by the lack of a national vision and coordination on public access to the information highway. The federal government must set policies guiding the provision of public access through public institutions such as public libraries.

Province or Territory	Number of Library Locations	Libraries with Automated Catalogs	Dial In Access	CD-ROM Service	Internet Access
Alberta	310	45	17	25	14
British Columbia	246	35	11	27	9
Manitoba	100	39	22	37	4
New Brunswick	61	3	-	4	2
Newfoundland	106		-	-	5
Nova Scotia	73 (11 Regional Libraries)				11 Regional Libraries
Ontario	850 (398 systems)	200	20	302	35
Prince Edward Island					
Saskatchewan	314 (10 systems)	(6)	(3)		(2)
Quebec					
Northwest Territories					
Yukon	18 (1 system)	(1)	0	(1)	0

2.3 Provincial and Territorial Networking Reports.

ALBERTA:

The Alberta Public Library Interlibrary Loan Network, which the Libraries Branch within the provincial government coordinates, already provides an infrastructure upon which to build an electronic network. It is partially automated now, and is currently involved in a pilot project where connectivity is provided through the government network. There is strong support from most of the libraries for networking. Strategic planning meetings held throughout the province by the **Libraries: Alberta Strategic Alliance for Planning Steering Committee (L:ASAP)** obtained strong support for an Alberta Library Network which would include all types of libraries in a seamless interconnected network. L:ASAP expects to present their strategic plan at the Alberta Library Conference in April/May/95.

Except for a few of the larger centres, like Edmonton and Calgary, who have their own accounts, the Libraries Branch does all of the out-of-province interlibrary loan searching for public libraries in Alberta. The Libraries Branch is not linked into Internet for this purpose as yet. The Branch also represents the public library interests in negotiations with other provinces, and the National Library of Canada on policy and protocol issues.

BRITISH COLUMBIA:

Public libraries have e-mail services available through Telecom Canada's Envoy 100 network. There is no connecting Internet network at present. Three libraries are currently connected to Internet as separate domains (Vancouver, Richmond, Victoria). Some libraries connect (dialup/dedicated line) through commercial Internet service suppliers. Interlibrary loan traffic is managed over a client server network which establishes dialup connections with each library overnight to pick up, distribute and update status on interlibrary loan transactions.

There is no connecting network between academic and public library systems at present. Planning for a "provincial learning network" (PLN) would establish a province wide network connecting public libraries, schools, colleges, universities, training institutes, museums and government offices/services.

Public libraries have access to the National Library of Canada through Envoy 100 network. Some libraries have e-mail or other network services available via the Internet.

Library services Branch will offer e-mail service on a dial-up basis (via terminal emulation/SLIP/PPP) during fiscal year 1995/96. It is likely that additional internet services will be made available for administrative (not public access) during this same period.

The Province continues to plan for a multi-jurisdictional province-wide network infrastructure which will provide a full-range of TCP\IP based services to all communities. Expectation is that the 1995/96 throne speech will provide details of government's commitment.

MANITOBA:

Public Library Services (PLS) Branch of the Manitoba Department of Culture, Heritage and Citizenship is guiding and supporting the automation of all rural public libraries to develop an integrated provincial library system known as the Manitoba Electronic Rural Library Information Network (MERLIN).

The Manitoba Union Catalogue is the central component of PLS's **Manitoba Electronic Rural Library Information Network (MERLIN)**.

The **Manitoba Union Catalogue** is the database for the provincial library system and holds the collections of PLS and all rural public libraries in the province.

Public libraries have begun development of local automated library systems with their own catalogue and circulation systems. These systems will be integrated with the PLS provincial library network to form MERLIN.

MERLIN will provide access from regional libraries to the central catalogue at PLS. Public libraries will be able to dial into the Manitoba Union Catalogue on PLS's computer system and directly search the database. Libraries will be able to share resources directly, without going through PLS. For items located at other libraries or electronically, libraries will contact PLS.

At the present time the Manitoba Union Catalogue lists books from PLS and certain other Manitoba public libraries. In the near future all rural public library holdings will be on the database.

Linking Libraries is an initiative of Manitoba Education and Training. It is "...a library linkage plan which, when implemented, can make the collective holdings of all Manitoba libraries available to all Manitoba students."

Consultants have been hired to consult with Manitoba library stakeholders to identify issues/problems related to linking libraries and developing implementation strategies and to provide an analysis which will have the following objectives: that all libraries, including school, public, college, university, special and government coordinate efforts to provide an effective and accessible supply of library information resources and services to all Manitoba learners. The consultants have submitted a report which recommends implementation strategies and includes a budget.

NEW BRUNSWICK:

The public library system has received an infusion of funds in the order of $1.25 M through the Canada/New Brunswick Infrastructure Program for the purpose of automating the regional and public libranes. Although, as part of the project, the five regional library headquarters and the five resource libranes (main libranes) in the province will be provided with online access to the INLEX database of public library holdings, all other service points will be equipped with CD-ROM catalogues. The plan is to eventually have all public libranes online, so this is seen as an interim measure. As yet, however, no funds have been allocated to cover telecommunications costs.

Furthermore, the workstations which are being acquired by the public libraries through this project will be dedicated to library functions such as provision of a catalogue and circulation. More workstations will need to be acquired, as funds become available, to provide access to the Internet. Only a couple of libraries are presently offering this access to the public.

One inhibiting factor may be that government-funded library "systems" - public, college, and school - all operate under different government departments which slows down the decision-making process. However, a body known as the Provincial Library Forum has been established to encourage cooperation amongst the different types of libraries and amongst the different departments. Already the Forum has formulated principles to govern the development of library automation, principles which promote standards (MARC format, Z39.50, etc.) that make connectivity and networking possible. These principles have received approval from the four government departments involved.

The five regional headquarters have online access to the INLEX database of public library holdings. Also three of the resource libraries in the system have an OPAC (Online Public Access Catalog) situated in the reference area. The plan is to extend OPAC to the five resource libraries in the province, and this under the terms of the Infrastructure project. The long-term plan is to connect all 61 public libraries in the system.

The regional libraries are able to access the University of New Brunswick online catalogue (Pheonix, soon to be Quest) and the Université de Moncton catalogue (Eloise). The reverse is not true, although the potential is there. Up until now, the public library database on INLEX has not been large enough to warrant much effort in making it available online to academic libraries or others. However, the public library system is now embarked on recon and the database is growing rapidly. They will begin to explore access to the catalogue from remote sites. The community college libraries have discussed a provincial approach to automation but have not as yet reached a consensus.

All schools within the province are being equipped with LANs and with Internet access. So although there is no connectivity between school and public libraries at the moment, the potential is there for networking somewhere down the road. The ten school-public libranes in the system will, of course, benefit immediately from any advances made on either the school or the public library front.

NBLS provides a centralized ILL service to four of the five regional libraries and accesses Dobis for this purpose. Saint John Regional Library also accesses Dobis for ILLs. This coming year, NBLS will study the possibility of making the INLEX database available to the NLC for the purposes of resource-sharing.

The government has recently provided seed funding to a project known as NetLearn NB that would provide, through the Internet, a single entry point to online information, e.g government information, library catalogues, indexes, art gallery and museum collections, credit courses, conferences, health information, etc. Public libraries are being considered as prime locations for NetLearn kiosks.

NEWFOUNDLAND

Newfoundland libraries are very supportive of both province-wide and Canada-wide library networking.
Currently several networks exist in the province. Memorial University and its regional college at Corner Brook are connected through the provincial network, NLNet. Community college libraries are connected to Stem~Net, the provincial education network. There are no networks connecting public libraries.
Some recent public library automation initiatives include: the introduction of an integrated automation system to provide efficient and effective cataloguing; on-line public access catalogues, and circulation functions for

the St. John's Library System; and the computerization of the Gander Regional Resource Library, including a CD-ROM Network.

NOVA SCOTIA:

The Nova Scotia Provincial Library's integrated automated system, NcompasS, is a powerful multi-faceted system and network. It represents the culmination of careful research, a province-wide vision, cooperative planning, and a desire to position the Nova Scotia Regional Libraries at the leading edge of information technology.

The system was designed to provide end-users with enhanced access to all holdings of the Regional Libraries of Nova Scotia, improve the efficiency of Provincial Library's centralized acquisitions and cataloguing services and form the basis of a province-wide electronic network, providing e-mail and Internet throughout the regional library system. Once public access terminals are installed, public libraries will be able to offer limited Internet access to their patrons and provide connectivity with other provincial databases and bulletin boards. NcompasS is a gateway to the worldwide network of networks, the Internet, as well as to Novanet, the University libraries' database, the developing Chebucto and the Cape Breton Freenets. Soon there will also be links with museums, schools and community colleges.

The tri-lingual multiLIS library software was selected for its superior cataloguing functions and ability to network. Presently there are three databanks within NcompasS: the NSR bank of library holdings for the nine regional libraries for which Provincial Library catalogues materials, the Halifax City Regional Library, and the Dartmouth Regional Library holdings. The latter two libraries are using Dynix software, and export a tape of their holdings which is loaded on NcompasS. Together, the three banks form a virtual database that is practically transparent to the end-user. The interconnectivity of the three systems will be even greater when they become linked using the ANSI Z39.50 protocol. The Nova Scotia Museums and Education Media Services have been investigating the possibility of sharing the system. This would be of great benefit to end-users, who would have one-stop access to more information.
Eventually NcompasS will be a wide-reaching distributed network, with a central system housed at Provincial Library and individual automated library catalogues at the Regional Library level. Functions such as circulation and collection rotation will be controlled at the regional level, while seamless access is provided to all patrons province-wide. Provincial Library will maintain responsibility for the integrity of the database, and provide coordinated authority control. There is an automation plan in place to make funding available for the automation of all Regional Libraries in Nova Scotia. This will extend the benefits of NcompasS to over 85 service points throughout the province.

ONTARIO:

The major public library networking initiative in Ontario is the Information Network for Ontario (INFO) in response to Goal A of the Ontario Public Libraries Strategic Plan. The purpose of INFO is to produce and maintain a provincial database of the holdings of automated public libraries in Ontario (170 in 1994), and to facilitate access to materials province-wide. This has been a collaborative effort between the branch, the Ontario Library Service, and Metropolitan Toronto Reference Library and was first completed in CD-ROM format in the fall of 1993 (7 CD-ROMs and 6 million records). Phase two (spring 1995) is the introduction of interlibrary loan software (AVISO).

The AVISO software adheres to the International Standards Organization's 10161 protocol for interlibrary loan. Messages are forwarded between library sites by a Postmaster which resides on a UNIX box at each of the OLS agencies and the Metro Toronto Reference Library. It collects cumulative statistics on network traffic and provides a gateway to non-public libraries.

Running parallel to the second phase of INFO, are plans to introduce Internet services to the public libraries in Ontario. This move will encourage the development of public libraries as entry points to the provincial information network, INFO and the Internet. Specific Internet services such as e-mail among public libraries and beyond, FTP, remote searching, access to discussion groups and forums and WWW browsers will be introduced using a phased-in approach.

Network 2000: The branch is also working with the OLS, the MTRL, the Archives of Ontario, the Association of Community Information Centres of Ontario and the Ontario Public Library Strategic Directions Council on a major strategy to develop and implement equitable public access to electronic information on a province-wide basis. *Network 2000* provides the information infrastructure needed by Ontarians to access electronically available education, training and economic job creation, government and other information needed in a restructuring economy. The proposal going forward to the Ontario Network Infrastructure Program Council (ONIP) is a seven point, three year strategy:

1) the adoption of universal access principles;
2) the development of a broadband, highspeed, interoperable telecommunications network infrastructure for community information providers throughout the province;
3) the provision of widespread public access to the Internet and the global information infrastructure through public libraries and other community information providers, for all Ontarians, including those people who currently cannot access electronic information resources through the school, workplace or from home.;
4) assurance of access to the system for members of designated equity groups and also including the elderly and shut-ins as well as the creation of content relevant to these groups;
5) the coordination of public access network partnerships;
6) the creation of digitized government and community content throughout Ontario communities to provide data resources for the global information infrastructure;
7) the development of information training support for all public information workers and Ontarians who have not received such training in the workplace or at school, college, university or other educational training centres.

NOTE: as of March 10, this project is under review at ONIP. In the event that the project receives limited or no funding from ONIP, it will still be developed. Network 2000 develops and implements thr provincial information gnd, identified as a top priority in the Ontario Public Library Strategip Plan released in 1990. Network 2000 is a modular project and elements of it can be developed without ONIP funding.

Networking and electronic clusters: A major strategy for the development of the Provincial Information Grid is the "network of networks" configuration. This involves provincial funding support for the development of local and regional networks throughout the province. There are approximately 20 of these local and regional electronic networks to which public libraries are contributing, either as the lead or as a major partner.

SASKATCHEWAN:

Saskatchewan public libraries have developed a proposal for a province-wide library electronic information system (PLEIS). The first phase of the project is to upgrade the Provincial Library computer to allow the creation of a virtual union catalogue by loading the catalogues from all of the regional libraries and the north, as well as a number of special libraries.

The second phase consists of achieving electronic connectivity among the headquarters locations for the 10 public library systems and the Provincial Library. The Provincial Library has purchased an electronic connection for ten library systems through SaskTel's Wide Area Network Service.

Phase 3 will be to establish connectivity among other types of libraries and to all library branches within the regions. The Provincial Library has submitted an application for funds from the Canada-Saskatchewan Infrastructure Works Program to make technology grants available to local libraries to purchase hardware.

Immediate networking plans in Saskatchewan include:

- connecting all regional library headquarters to Provincial Library by March 31, 1995;
- connecting all public libraries in cities to the Internet by the fall of 1995. Connections to smaller centres are part of the next phase of development;
- connecting public libraries with schools by having Saskatchewan public libraries negotiate sharing the pipelines with Saskatchewan Education, Training and Employment.

YUKON:

The public libranes in the Yukon are strongly supportive of nation-wide library networking.
Public Library Services(PLS) currently uses SLQ's LaserQuest system for cataloguing and LaserGuide for the production of a public access CD-ROM catalogue; copies of the catalogue are available in Whitehorse and in nine communities, and include the entire Libraries & Archives imprint and catalogued collection. PLS will be switching to The Library Corporation's BiblioFile system for these products in coming months. PLS is currently implementing BiblioFile circulation and acquisitions modules and are expecting the circulation system to be up later this year. A number of libraries in the Yukon, including territorial government departments and Yukon College, have standardized on The Library Corporation's products to enhance resource sharing; future considerations include shared cataloguing and the production of a union CD for all Yukon library holdings.

PCs and terminals in Public Library Services and Whitehorse Public Library will be linked through a Novell NetWare LAN; this will also provide access to e-mail and Internet and services of YTG Information Systems Branch through the YTG mainframe.

Internet access is being planned through the YukonNet Operating Society, a local non-profit organization which will be the regional service provider for Yukon. Services are scheduled to be available after September, once NWTel has a digital line (56k) operational, and ca*net has a router in place. Plans for library connections initially include full staff access and limited public access in Whitehorse; expansion to the rest of the Yukon is being considered as a later phase.

The Yukon is considering a proposal for joint partnership with NWel in the provision of a public videoconferencing facility in Whitehorse Public Library as a pilot project; the first use of the facility will be by Queen's University for their national Executive MBA program which is being delivered across the country via video conferencing technology.

The Yukon is looking at providing public access to computer facilities, for use of CD-ROM and other databases, for word processing and communications; plans are for PC and MAC-based systems for use by adults and youths.

In all these initiatives, the LPS is working closely with YTG's Information Systems Branch (formerly Systems & Computing Services), Yukon Net Operating Society, of which LPS is a corporate member, and other Yukon libraries, chiefly through Information Providers, our professional association.

NORTHWEST TERRITORIES:

NWT Library Services adopted multiLIS as its library automation system in 1988. Currently around 100,000 records from NWT Library Services, Yellowknife City Library, NWT Legislative Assembly Library and Keewatin Board of Education are in the online system which consists of Acquisition, Cataloguing, Circulation, Rotation, OPAC, Report Generator modules with satellite communications supported by NWT Government Services. In 1993, NWT Library Services installed IBM RS6000 minicomputer with upgraded version of multiLIS 10.8. Due to the cost and complexity of communications in the north, in 1991 NWT Library Services developed its CD-ROM based Union Catalogue to share information with all remote communities. The placement of the NWTLS CD-ROM Union Catalogue in all public libraries in the Territories in mid 1992 resulted in a big increase in interlibrary loans. The 100,000 record database will also be placed in the National Union Catalogue at National Library's request.

Currently a major project is undergoing to setup a CD-ROM Reference Tools LAN with remote dial-in access. This LAN will be connected to UNIX based multiLIS online system. NWT Library Services is working closely with Radio & Television and Distance Learning towards a major information service centre of the Department. Internet connection to this system will be considered in the near future.

2.4 Results of the Council of Administrators of Large Urban Public Libraries (CALUPL) Survey

Twenty of Canada's largest public libraries responded to the survey sent to the members of the Council of Administrators of Large Urban Public Libraries (CALUPL). A summary of the current state of automation and networking is included in the following chart.

PUBLIC LIBRARIES	AUTOMATED CATALOGUES	DIAL-IN ACCESS	CD-ROMS	INTERNET ACCESS
Brampton	✓	✓		✓Administration Only
Burlington	✓	✓	✓	✓
Burnaby	✓	✓	✓	✓Service purposes only
Calgary	✓	✓	✓	✓Administration & Service Only
Edmonton	✓	✓	✓	✓
Gloucester	✓		✓ Cataloguing only	✓Administration only
Halifax	✓			✓
Markham	✓	✓	✓	✓E-mail only
Metro Toronto Reference Library	✓	✓	✓	✓Administration only
Mississauga	✓	✓	✓	✓ Administration only
Montreal	✓		✓	✓ Administration only
Nepean	✓	✓	✓	✓ Administration & Service
North York	✓	✓	✓	✓ Administration & Service
Oakville	✓	✓	✓	✓
Ottawa	✓	✓	✓	
Richmond, B.C.	✓	✓	✓	✓
Scarborough	✓	✓	✓	✓
Surrey, B.C.	✓	✓	✓	✓
Toronto	✓	✓	✓	✓

The key issues identified by the CALUPL group were similar to those issues identified in the provincial and territorial survey. A brief summary of the key issues identified by the larger public libraries in Canada follows. Copies of the CALUPL surveys are available on request from the Coalition for Public Information.

2.4.1 Costs

Hardware, operating and connectivity costs are seen as prohibitive. In many cases sufficient funding is not available to provide the required SLIP/PPP, 56kb, ISDN or T1 connectivity required for significant service and multimedia connectivity. Dial-up access is inadequate for the type of services required.
There is growing concern that the telephone companies will be allowed to charge for local telephone and data transmission by amount of use. This would introduce a very heavy financial burden for public libraries.

2.4.2 Training

Even the largest libraries have a training problem. Many of the staff currently in public libraries do not have sufficient training in the new information and networking technologies. This situation is especially problematic when it comes to technical troubleshooting. Networking software, hardware and telecommunications is very complex and requires a high level of training and experience.

2.4.3 Access

Even those libraries that are connected to the Internet are finding that the infrastructure is overloaded. For example, the staff at the Calgary Public Library often have to wait an hour for an Internet connection and there connection is through the University of Calgary. Libraries that are connected through FreeNets have even more trouble and FreeNets generally do not provide full Internet access.

2.4.4 CD-ROM License Costs

The current costs and arrangements for obtaining CD-ROM licenses for WANs are prohibitively high. Without access to networked CD-ROMS it will be impossible to provide public access to reasonable amount of content on the information highway.

2.4.5 Liability

Library liability, especially with public access terminals in the library, and accessing what information is on the Internet is a concern. Liability under the Criminal Code for access to illegal material through the library must be clarified (to ensure that the library is not held liable).

3. LIBRARIES AND THE INTERNET

Ideally all public libraries will have cost-effective connections to the Internet. The **Internet** is a collection of world-wide computer networks that provides many features including electronic mail and electronic transfer of documents between locations.

Internet access would further enhance the sharing of electronic catalogues between libraries and direct public access to library services. Provision of public access to the Internet within libraries promises to expand and accentuate the role of public libraries in the "global information community".
Public libraries should consider the use of Internet utilities, such as, ftp, e-mail, telnet, gopher and the World Wide Web for the following functions (New Brunswick Library Service. Province-Wide Library Network Plan):

- search other libraries' catalogs;
- obtaining catalogue source records from utility or other automated library systems;
- interlibrary loan locations and messaging;
- electronic data interchange (EDI) for acquisitions and serials control;
- electronic distribution of information and documents in support of library services and distance education;
- obtaining electronic documents;
- access to remote library and government information resources;
- access to remote commercial information resources;

- access to document delivery services;
- electronic mail services;
- general communication.

4. LIBRARIES AND FREENETS.

In some provinces FreeNet development is more advanced than in others. For example in British Columbia FreeNets are a major force in providing public access networking and are closely connected with public libraries. In New Brunswick, another progressive networking province, the FreeNet movement seems to be having a lesser impact. If FreeNets do not migrate to a more sophisticated networking platform it will be difficult for them to provide public libraries and other public institutions with the level of connectivity required to provide full broad band access to the information highway.

ALBERTA

Edmonton Freenet - unknown how many libraries access it.
Calgary Freenet - unknown how many libraries access it.
Freenets planned in Lethbridge, Ft. McMurray, Red Deer, Grande Prairie.

BRITISH COLUMBIA

The following FreeNets are connected to public libraries in British Columbia.

Vancouver Free-Net: Vancouver Public Library
Richmond Public Library
Port Moody Public Library
Other Lower Mainland Libraries through dial-in or gateway services
Other libraries through other Free-Nets

Victoria Free-Net: Greater Victoria Public Library
Vancouver Island Regional Library branches planned
Other libraries through other Free-Nets

CIAO (West Kootenay): Kootenay libraries through dialup
Other libraries through other Free-Nets

Prince George Free-Net: Prince George Public Library (gateway access)
Northern libraries through dialup/dedicated line
Other libraries through other Free-Nets

Sea-to-Sky Free-Net (Squamish): Area libraries through dialup/dedicated line
Other libraries through other Free-Nets

Nanaimo SchoolsNET: Other libraries through other Free-Nets

Campbell River FreeNet Association: Campbell River Branch
(Vancouver Island Regional Library)

Mount Arrowsmith Free-Net Association: Parksville & Qualicum Branches (planned)

Cranbrook Community-Net (organizing): Cranbrook Public Library

Rocky Mountain InfoNet(organizing): Sparwood Public Library

MANITOBA

The Winnipeg Public Library is connected to a FreeNet.

NEW BRUNSWICK

No libraries are connected to FreeNets.

NEWFOUNDLAND
The St. John's Public Library will be connected to the St. John's InfoNet as of April 1, 1995.

NOVA SCOTIA
The Chebucto FreeNet is the one operating FreeNet in Nova Scotia and several of the regional libraries have home pages on Chebucto.

ONTARIO
Currently, 15 public libraries have FreeNet Public Access Terminals. 6 public libraries have OPACS accessible via FreeNets. A number of public libraries are members of or are participating in the development of local FreeNets.

SASKATCHEWAN
The Regina Public Library and the Saskatoon Public Library are connected to their local FreeNet.

YUKON
Currently there are no FreeNets in the Yukon.

5. THE COSTS OF CONNECTING PUBLIC LIBRARIES TO THE INTERNET.

From the information obtained from the survey, it is clear that there is insufficient information available to submit a **firm** estimate as to what it would cost to link all public libraries in Canada to the Internet. A study which examining each library would be required in order to produce this figure. Several provincial library systems are in the process of conducting such studies (Alberta, Saskatchewan). Some provincial systems may link with a broader education system (British Columbia). Many of the individual larger public libraries are planning for their own connectivity (for example, see chart for estimated costs at Toronto Public Library and the InterLINK group in BC). Some of the costs provided are based on actual studies (New Brunswick and Ontario), while some are educated guesses. It must also be remembered that a better understanding of the actual usage by the public, the actual usage rates, and the costs of accessing fee-based remote data bases would have to be known before firm figures could be provided. Since there are no earlier usage records of what is a new and transformational development actual experience and further studies will be required to determine these figures. In spite of these qualifications, based on an analysis of the numbers available, a **general cost** cost estimate for connecting all public libraries is possible.

The two studies for New Brunswick and Ontario are the most complete and are based on careful analysis. New Brunswick estimates the start-up cost of full patron connectivity at $1,556,083, while Ontario estimates this cost at $27,950,000. By taking these costs and comparing them to the populations of New Brunswick and Ontario, this provides an average cost of $2.52 per capita for providing public Internet access for the residents of these two provinces. Assuming that the $2.52 per capita figure is accurate, and initial studies suggest that it is, then the cost of providing public Internet access for all Canadians, through their public library, is estimated at $2.52 X 29,248,100 = $73,705,212.

Summary Chart of Internet Access Costs

Province or Territory	Estimated Costs	Notes
Alberta	NA	
British Columbia	$10,000,000.	Estimated costs of Provincial Learning Network
Manitoba	$240,000.	
New Brunswick	$1,556,083. (start-up) $125,000. (operating)	
Newfoundland	$1,000,000.	
Nova Scotia	$250,000.	
Ontario	$27,950,000.	
Prince Edward Island	NA	
Quebec	NA	
Saskatchewan	NA	
North West Territories	NA	
Yukon	$80,000.	
Toronto Public Library	$90,000.	

Other Relevant Information:

Alberta

No data is available. Alberta is unable to determine or provide the cost of developing an infrastructure or providing connectivity for libraries to the Internet. A research project undertaken by the Libraries Branch will be compiling this data later in 1995.

British Columbia

The Branch has funded connectivity for ILL through the client/server model for all public libraries at an annual cost of $30,000. Full network access for all public libraries requires commitment of government to provide the network infrastructure reaching all communities. Other than on a dialup basis, this is not fully in place. Provincial Learning Network proposal calls for an investment of $10 million. Branch has delayed planning full network connectivity for public libraries in favour of the PLN proposal.

The extent of direct patron access to Internet resources is not actively under consideration by B.C. libraries at this time. Until full network connectivity is realized and library resources on the Internet are identified and developed, direct patron access is a secondary goal.

Manitoba

For the purpose of ILLO: $100,000 per annum
For ILLO and Reference: $130,000 per annum
For ILLO, Reference, and Administration: $130,000 per annum
For direct patron to Internet resources: $240,000 per year - would include ILL, Reference and Administrative use.

New Brunswick

Full Internet access: $1,556,083. one-time start-up and $125,000. annual operating costs.

Newfoundland

Full patron Internet access: $1,000,000.

Nova Scotia

For the purpose of ILLO: $63,000 annually - non available
For direct patron access to Internet resources: $250,000

Ontario

For the purpose of ILLO:	$600,000 (current allocation)
For ILLO and Reference:	$600,000 (current allocation
For ILLO, Reference, and Administration:	$600,000 (current allocation)

For direct patron access to Internet resources: 2.3 Million as an absolute minimum for text-based (non-multi-media) access to the Internet, (to cover costs of computers and connectivity costs for one year only).

To secure optimal public access from the provincial information infrastructure to globally available, multimedia information, Network 2000 calls for an investment over four years of $27.95 million in the technology infrastructure, $887,000 for network management administration expenditures, $3.3 million for network access, $3.6 million for training, and $18.8 million for local, regional and provincial database content creation.

Provincial Library Project Grants (LPG) funding of $790,000 is anticipated for 1995/96, (pending 1995/96 budget announcements). $500,000 of this could be anticipated to be devoted to public library connectivity, and $200,000 to library automation. Remaining funding necessary for public access to global multimedia information resources is being sought as part of the Network 2000 application to ONIP.

$790,000 LPG funding is anticipated. This will only cover costs for gradual implementation of multimedia workstations for public access to INFO or the provincial information infrastructure, and does not address the need for a broadband width network capable of transmitting multimedia information resources.

Saskatchewan

Saskatchewan public libraries are in the midst of negotiations with Sasktel and are unable to provide this information at this time. Provincial Library will be purchasing the electronic connection from Sasktel for the ten public library systems. This will create the communications backbone among these sites as well as provide limited Internet access. The library systems will be fiscally responsible for establishing connectivity amongst other types of libraries in their communities and to all branch libraries within their region. However, the Provincial Library will be distributing small, one-time grants of approximately $2000 to the ten public library systems to defray some of the costs of expanding connectivity to other types of libraries in their communities.

In addition to the above, the library systems are hopeful for a federal infrastructure grant which would also be used to defray one-time costs. The infrastructure grant of $500,000 will be used to match local funds in the implementation of phase 3, to extend the network to rural Saskatchewan and the north.

Yukon

The costs for connections within the Yukon Government, plus the required hardware is estimated at $80,000. for all public libraries for full Internet access.

Specific Public Libraries:

Richmond Public Library

The cost of providing 1 public station in house was roughly $3500 plus the line charge of $750 per month for all staff and public Internet access. RPL is currently providing 1 public access station on a Mac with the Mosaic Browser in house. Plans are being discussed to increase the number of public access stations and also to become an Internet provider via dial up.

Ottawa Public Library
Providing that an Internet node connection for administrative and service use is obtained first, the cost of providing direct patron access is estimated at roughly $3,000 per OPAC station, since existing terminals will have to be replaced with PCs. The associated staffing, training and administrative costs have not yet been determined.

Toronto Public Library
$90,000 annually, including hardware, telecommunications, and staff administrative costs to provide full Internet access with a user ID, from library, home, or business.

Other Jurisdictions:

InterLINK BC.
InterLINK is a federated public library system comprised of twelve Lower Mainland and Fraser Valley libraries.

The BC21 Proposal will connect any InterLINK library to the FreeNet and the Internet. Within this proposal public access workstations with modem and printer will cost $4,332. each. Internet connectivity for each library to access the Internet, including router, modem and software will cost $10,146.

United States
A recent study stated that 20.9% of public libraries in the US have an Internet connection. 6.6% have direct, dedicated line access to the Internet. The cost of maintaining an Internet connection ranges from an annual average of $108 for small public libraries to $14,697 for large public libraries.

Maryland
Maryland's state library system has undertaken to provide free Internet access to the state's libraries. Known as the "Sailor Project" it will offer access to a gopher set up by the library system. Once connected users will be able to access many of the Internet's other information resources. Start up and first year operating costs were identified at just under $2 million.

6. ISSUES

6.1 Funding Issues

LONG DISTANCE CHARGES
The major obstacle to electronic communication between libraries is the cost of long distance telephone line connection from one library's computer to that of another library. Telecommunication costs, especially long distance rates, are prohibitively high for public libraries. Lines are inequitable and disparate and as long as charges are tied to time and distance, rural, remote and northern locations will be severely disadvantaged. **All of the provincial and territorial library systems contacted identified this as the major deterrent to development.** Some pointed out that if the current long distance rate structure is maintained then it is most unlikely that all public libraries will be connected to the information highway.

HARDWARE COSTS
Hardware costs are generally a local or municipal responsibility. Funding is required for the hardware that will allow public libraries to act as public access points to the Internet and the information highway. A lack of capital funding, particularly for small libraries, places libraries at a particular disadvantage. Ongoing maintenance cost and rapidly changing computer technology is also a concern.

CONNECTIVITY COSTS
Funding is generally not available for ongoing connectivity costs. Libraries will need T1 connections if they are going to be able to deliver multimedia products. The preceedding cost estimate of $73 million is not based on T1 connections. It is based on 56kb leased lines.
Also of major concern are the costs of retooling and developing interfaces between the variety of incompatible library systems, communication software and telecommunication platforms.

CANADA-WIDE INTER-LIBRARY LOAN

The level of public library development across Canada varies from province to province. If all public libraries are going to part of a national system of information and library services, then obviously the weaker library systems will borrow more heavily from those libraries that are at a higher level of development. This will lead to unfair pressure on those systems. If a national public information system is to be developed the federal government will have to consider offsetting the lending and communication, and distribution costs of net-lending libraries. The lack of funding from the federal government diminishes both the will and the ability of public libraries to share resources on a national level.

INTEROPERABILITY COSTS

There is a wide range of different operating platforms, library operating systems and communication software in libraries. The need to retool library hardware and software and the need for interface technology and expertise is inhibiting development in this area. The variety of in-house automated library systems (public, school and university) makes electronic resource-sharing difficult since technical complications abound, and the cost of implementing standard protocols such as Z39.50 is extremely high.

6.2 Public Bandwidth

There is a need to provide free public access to multi-media capacity broad band width to provide optimal public access to electronic, multi-media information.

6.3 Training

Training in the use of Internet and information highway technologies is a needed for both library staff and the public. The lack of technical expertise and/or unavailability of technical expertise at the local level, especially in the rural areas, is a major concern. There is currently limited funding available in some jurisdictions and no funding in others for training. Generally there is no coordinated approach and no body with primary responsibility for training and the need is great. Public libraries should work to ensure sufficient public awareness to promote the benefits of these new technologies and to ensure appropriate and effective use.

6.4 Content Issues:

COPYRIGHT

Copyright issues on electronically-available information have yet to be resolved. Copyright law must be updated to reflect digital realities.

Several respondents to this survey have suggested that copyright issues be settled, so it is clear that users can print or download single copies of information for personal non-profit use without requiring payments to authors or publishers

LIABILITY

Library liability, especially with public access terminals in the library, and accessing what information is on the Internet is a concern. Liability under the Criminal Code for access to illegal material through the library must be clarified (to ensure that the library is not held liable). There are no policy models to work from and no clear direction.

LICENSING

Licensing issues are of concern. Not only the cost of obtaining licenses for providing access to various databases/services on the Internet, but also for CD-ROM products, mounting full text databases on local networks, and for printing from other databases. Providing access to library databases can also effect system licenses. There are serious concerns about the number of CD-ROMs for which networked versions are not available.

There is a need to obtain low cost provincial software and CD-ROM licensing rights for public libraries.

DIGITIZATION

There is a need for content, particularly Canadian content, on the information highway. Major attention needs to be paid to the development of local, regional and provincial content in digitized form. Public libraries have local resources which are already in the public domain which should be digitized and made available to the public.

6.5 Internet Access

Currently public libraries obtain Internet access through local universities, government accounts, FreeNets, and from commercial vendors. Access to the Internet through a Freenet is not sufficient access for a library to use the Internet as a reference and information source. Access to the Internet through commercial vendors and/or through personal contacts of staff through associations or university college sponsorship tends to be fragmentary and disparate. Commercial access does not provide for public access through public libraries because cost becomes a major factor. A coordinated approach to providing Internet access is required.

6.6 Information Policy

Many provinces do not have an information policy or coordinated position with regard to the development of the information highway. Several do not have a single agency with responsibility for this or for library development across all sectors. The federal government does not have a policy regarding public access to the information highway, nor does it have a position on public libraries. In the absence of public policies or coordinating bodies dealing with public access to the information highway and the role to be played by public libraries it is very difficult to maximize resources through a coordinated development program. Governments must establish information policies to direct and coordinate the development of public access strategies.

6.7 Government Information

Canadian citizens must be effective users of knowledge resources. As the largest publisher in Canada, the federal government can accelerate the learning process among citizens by making its information resources readily available via the Information Highway. Therefore, the federal government should develop and adopt policies to ensure that network access to all Canadian government tax-supported electronic information will be available to all citizens through their public libraries and other appropriate community information providers at no or minimal charge. An operating assumption would be that all such basic government information be accessible for public use, except when issues of privacy or national security are involved.

6.8 Standards

Network standards need to be developed to ensure the interoperability of various networks and telecommunication links so access is seamless and broadly available. In a dynamic and changing environment, it is difficult to have universal standards. Rather there are numerous international, national, proprietary and de facto standards that continue to evolve. Nonetheless, it has long been recognized in the library community that sharing electronic resources requires national bibliographic and technical standards for communicating and exchanging information. The National Library should continue to develop and promote the use of appropriate standards in the public library community.

6.9 Security

Public libraries will have to establish firewalls to ensure data security once they obtain full Internet connectivity. This will increase the hardware costs for public libraries.

7. THE ROLE OF THE NATIONAL LIBRARY OF CANADA

While there are no dedicated networks which link public libraries to the National Library, public libraries do use the Internet and Datapac to access National Library information and services. A variety of services are available using these networks, including:

DOBIS Search Service: Over 680 registered organizations are using the National Library's DOBIS database via Datapac or the Internet to locate items for end users, to obtain cataloguing copy, or to verify bibliographic information. In the near future, libraries will be able to access AMICUS, the National Library's new system.

Interlibrary Loans / Locations: Over 600 loan/location requests are received by the National Library's Interlibrary Loan Service on a daily basis, chiefly by electronic mail. Both Envoy 100 and Internet e-mail are accepted.

Reference & Information Requests: Requests are accepted via electronic mail (Internet or Envoy 100), telephone, fax, and electronic mail. This service is available to supplement the reference resources of public libraries, public library systems, and provincial library services, and to provide more information on NLC programs and services such as the Canadian Book Exchange Centre.

In addition to the above, libraries can access the National Library's gopher server via the Internet for information on NLC products and services, and as a 'gateway' to other federal government information sites.

The National Library has a number of major initiatives which are either in progress or planned:

AMICUS, the National Library's new, state of the art, bibliographic information system is in development and testing. Once this system is available, libraries and individual users will be able to check the National Library's online public access catalogue (OPAC) at no charge. There will be a fee-based version of the complete NLC data base, including access to the National Union Catalogue.

Z39.50 /Search and Retrieve: An ongoing initiative relates to promoting and evaluating the implementation and use of Z39.50.

NLC World Wide Web (WWW) Homepage, NLC Gopher: The NLC Gopher will continue to be available and is being added to. An NLC WWW server is being developed, and will be made available before long.

Other initiatives include enhancements to **PEB/ILL,** NLC's interlibrary loan system, and the **Electronic Publications Pilot Project**, which, among other things, will make a number of Canadian electronic periodicals available via the NLC Gopher.

7.1 An Enhanced Role for the National Library.

CANMARC records
Public libraries should be given direct on-line access with file transfer capability to CANMARC bibliographic and authority records.

Depository Services Program and Directory:
Libraries across the country are used as dissemination centres for government information through the Depository Services Program. It is expected that libraries participating in this program will continue to play an important role in public access to government information, particularly in assisting the public to navigate the electronic information environment. The National Library, in its role as guardian of all government published information, will be an access node to high-demand government publications, both print and online, through its interlending service, its on-site consultation facilities and its online information servers (AMICUS, Gopher, WWW). A comprehensive directory of both print and electronic government information will be needed to

ensure access for all Canadians. Given the National Library's collections, expertise, and state-of-the-art AMICUS bibliographic system, NLC is the most logical federal government institution to exercise overall responsibility for the creation and maintenance of this directory. This registry of government information would make use of the AMICUS union catalogue which includes bibliographic descriptions and locations of current and retrospective government publications; uniform resource locators and registration numbers, which will be added to the directory for access to government electronic publications; Infosource, which contains information about the Government of Canada, its organization and its information holdings; National Archives information holdings which can be made accessible through AMICUS, and departmental inventories and catalogues.

Registering Canadian Information on the Internet:
The National Library can continue to encourage the development of mechanisms which inform the public as to what information is available on the Information Highway. Using the capabilities of AMICUS in support of the National Union Catalogue, the National Library could provide a mechanism for registry of Canadian information located on the Internet. This might be achieved in a variety of ways; one potential approach would be for libraries to catalogue Internet resources using AMICUS, including the universal resource locators (URLs) to permit direct access from AMICUS to the information. The National Library can also continue to provide Internet services such as its Gopher, which points to other federal government and library Internet resources.

Standards:
The National Library continues to develop and promote the use of national and international standards, including CAN/MARC (Canadian Machine Readable Cataloguing), the ISO Interlibrary Loan Protocol, and the Z39.50 standard, which allow libraries to exchange information, interconnect and share resources. An expanded role in this area is not proposed, but a sustained effort is.

Canadian Content:
The National Library has a support and enabling role in fostering Canadian content, national collections, and digitization. The National Library, through its close relationships with other federal cultural institutions, and other major libraries, could enter into an expanded range of partnerships to make more of the Canadian cultural heritage available to all Canadians through the Information Highway. These partnerships would contribute a great deal to a healthy, vibrant Canadian Information Highway. It should be noted that an expanded role would be most successful with additional funding.

Pilot Projects
The National Library should coordinate pilot studies and projects which would support more Canadians having access to information and library services at a lower cost. The National Library should conduct more pilot projects such as the one it is currently engaged in now on the storing and preservation of electronic information.

8. THE ROLE OF THE FEDERAL GOVERNMENT.

It is most important that the Government of Canada establish and define a clear federal role to support public libraries in the information society. Public libraries should be mandated to serve as the information safety net for society to prevent the development of information have's and have not's. The following identifies some of the specific roles that the Government of Canada could fulfill.

Policy Development
The federal government should develop access principles and policies with incentives for provincial governments to provide access.
The federal government, including the Information Highway Advisory Council, should take a strong, proactive lead in developing copyright policies for the information age, to help facilitate universal public access to information.

Regulation
The federal government must create a policy, regulatory, and legislative environment that will foster the development of a public information infrastructure. From the library point of view, regulations must be established that:

- reallocate funding and mandate libraries to expand their role as society's information providers into the electronic environment;

- require the private sector to expand network connectivity to all workplaces, schools, libraries and homes, and ensure that it meets current and reasonable future bandwidth demands.

Publicly supported educational institutions such as libraries and schools should have access to the Information Highway for a reduced rate, or adequate bandwidth should be allocated to not-for-profit institutions such as libraries. Regulation must also promote end-to-end digital service for basic telecom service and the development of the most effective and affordable high-speed networking to the user.

Regulation should be used to lower telecommunications costs by requiring telephone companies and other carriers to fund a portion of the public access costs.

Legislation
The federal government could consult over, and develop an Electronic Public Libraries Act to guarantee universal, equitable public access to electronic information.

Tax Policies
Exempt public libraries from having to pay taxes for telecommunications or network development.
Tax on library acquisitions (esp. GST) could be reduced or eliminated, including on software, databases and other content made publicly-available on the information highway.
Public libraries should receive the same tax consideration as educational institutions.

Grant Programs
The federal government should consider a series of shared responsibility grant programs to help public libraries become the public access points to the Information Highway. These programs should include:
Hardware Grants. The federal government should establish a direct grant program to public libraries for the purchase of hardware to provide public Internet workstations.

Equity and Access Grants:
Project grant programs targeted for equity groups and public access and flexible to changing community and economic need, are needed. In addition to targeting rural communities and First Nations, federal grant programs for information highway access can be expanded to include urban areas, where 95% of Canada's population lives. Initial funding targets in urban areas can include areas of high unemployment.

The Government should continue the funding for the National Strategy for the Integration of Persons with Disabilities, especially to ensure that all Canadians will be able to use the Information Highway without encountering barriers.

Rural and Remote Access Grants:
Public libraries in rural provinces require federal government infrastructure grants. An infrastructure grant is essential to generate the matching local revenues to extend the network beyond the cities that have regional library headquarters, and to support the development of a multitype information system.
Grants should be made available to remote and northern communities to cover the costs of satellite access.

The National Library, through its existing services, plays an equalizing role at the national level, helping to ensure that all parts of the country have access to key library services such as interlibrary loans, reference assistance, and book exchange services. In keeping with this equalizing role, consideration should be given to funding the National Library to allow it to administer the grant programs to public libraries in order to assist them in becoming successful on-ramps to the Information Highway.

Operational Funding
This should be a local and/or provincial or territorial responsibility but some seed money for development programs would be helpful.
An infusion of federal government operational funding could help offset inter-provincial resource-sharing costs.

Training Programs
Training for library staff is critical and if done well could facilitate more cooperation between educational institutions and public libraries.
The federal government should help to establish a national Internet training program for librarians, including content creation database development skills, and Information Highway access skills, especially in persons training or retraining to enter the workforce. Federal funding could also be made available for the predominantly female library, community archive and community information centre workforce, to help them to upgrade their skills so that they can access globally available electronic information. Federal funding could be further extended to help train the public to access globally available electronic information.
The federal government could assist training by providing grants or other funding to the Canadian Library Association, National Library or provincial library associations, but it would be necessary to ensure that the training is offered in small centres and not just in major cities.

Procurement
The federal government could initiate Canada-wide licensing of shared software and information technology resources for libraries. The federal government could step up its efforts to redeploy surplus upgraded equipment to help libraries provide public access to the Internet.
There may be a place for central purchasing to reduce costs of the equipment and standardize the equipment in use initially. Conversely, the concept of a "buy local" federally sanctioned, procurement plan could go a long way toward contributing to local economic development, particularly in areas outside large urban centres.

Pilot Studies
The federal government could help fund information technology implementation, virtual library, information highway awareness programs, and information highway access marketing pilot projects.
Federally supported pilot studies at several types and sizes of libraries would be useful in providing information for others working toward Internet access. One pilot project should focus on the unique circumstances and needs of rural, remote and northern communities.

9. RECOMMENDATIONS

9.1 Canadian Public Library Action Plan

With leadership from the National Library, library associations, and the Coalition for Public Information, public library representatives must develop a national vision and action plan to establish public libraries as public access points to the information highway. This action plan should be based in part on the recommendations in this report and more fully on the detailed recommendations coming out of the proposed Phase II report. (See 10. The Next Steps).

9.2 Access - A Public Lane

Accessibility is a major issue. There needs to be a guaranteed public lane on the information highway that protects the public interest and their right to access information. Public access to the information highway for those who may lack the necessary hardware or expertise should be provided through public libraries and community information centres. Every public library should be connected to the information highway. This connectivity must eventually include full broadband access.

The Coalition for Public Information has made the following recommendation in Future-Knowledge: The Report:

"The information highway must have a public lane accessible to everyone. A toll-free lane on the information highway should be provided for institutions, such as, schools, libraries, community networks, hospitals, by reserving 20% of the carrying capacity of future broadband networks for public use and civic participation. The recommendation submitted by Stentor that telephone companies should fund community television should be extended to cover the recommended 20% public reserve. The public lane would be governed by the National Access Board".

9.3 Rural and Remote Access

An infrastructure must be put in place that can handle the traffic, not just along the main avenues but in remote areas. The definition of basic telephone service in outlying areas must be reviewed in order to ensure that at a minimum datapac access through single-party lines is available locally.

9.4 Telecommunications Costs

The major obstacle to electronic communication between libraries is the cost of long distance telephone line connection from one library's computer to that of another library. Telecommunication costs, especially long distance rates, are prohibitively high for public libraries, lines are inequitable and disparate and as tax supported institutions, libraries should be exempt from long distance charges or at least have reduced rates or funding support to be able to access the information highway. The provision of government services and information via the Internet can be a reality only if there is broad public access, at low public cost, with an infrastructure and a policy that supports it and an independent body that organizes and runs it to serve the public good.

9.5 Equipment

Funding is needed to ensure libraries and other publicly funded institutions can acquire the equipment, skills and training they need to help users navigate "the Net" and access the information they need.
A basic Internet workstation should include:

- Computer with 486 processor or higher
- High speed modem (14.4bps)
- Color monitor
- Printer
- One phone line
- Mosaic or Netscape
- Direct PPP or SLIP access

The estimated cost of the proposed workstation is $5,000.

9.6 Standards

Standards is another issue. Network standards need to be developed to ensure the interoperability of various networks and telecommunication links so access is seamless and broadly available. This is a role for a national body.

9.7 Content

The federal government should work with provincial and territorial governments to fund pilot projects leading to the development of a "library without walls' or "electronic" Library. New legislation may be required to establish a distributed, electronic library. The electronic library will require partnership agreements between authors, publishers, libraries and governments.

9.8 Copyright

Copyright law needs to be reviewed to ensure that it does not create barriers to information, while at the same time affording appropriate protection for creators. Copyright issues must be resolved in such a way that the protection afforded to creators is balanced by the need and legitimate rights of citizens to use information, that is, to permit a flexible use of information by researchers, students, and the general public. Specifically, the Government must move immediately to Phase II of the reform of Canadian copyright law, which deals with users' rights. Reforms to copyright law should also consider the international context of the Information Highway, and the fact that information flows freely over borders.

9.9 Search Tools

Governments at all 3 levels, Federal, Provincial/Territorial and local should provide funding support to librarians and information services to develop tools for collecting, organizing, searching, archiving and preserving electronic information.

9.10 Training

Training and the development of the necessary skills and expertise at the local level is another major issue. Many librarians lack the skills needed to use the Internet effectively. Even if libraries can obtain the necessary funding for development, they will need a broad range of skills to maintain service on an ongoing basis.

The Government of Canada should provide leadership for a coordinated training program on the use of the Internet for librarians across Canada.

The training program should cover (Stites, p.5):

- History of the Internet
- Tools for Communication (email and Listservs)
- Telnet
- Finding Aids (Gopher, Veronica, Hytelnet, WAIS, WWW)
- Finding Files on the Internet (Archie)
- Retreiving Files form Remote Sites (FTP)
- Understanding Your Audience's Needs
- Resources On and About the Internet
- Internet Training for Library Staff (Train the Trainer)
- Internet Training for Library Patrons

It is recomended that 50 hours of training on the Internet are required to be proficient, and that 200 hours of practice on the Internet are required to achieve a reasonable level of comfort. The Coalition for Public Information has begun to identify the elements of a packaged Internet training program for librarians. Preliminary work suggests that a complete program could be developed at a cost of between $20,000 to 35,000.

A MODEL LIBRARY TRAINING CENTRE:

ELGIN & ST. THOMAS COMMUNITY CENTRE FOR INFORMATION ACCESS

The development of the Elgin & St. Thomas Community Centre for Information Access (the "Centre") was a community effort. The Centre is in part a response to the appalling severity of the recent recession in Elgin County and St. Thomas.

The Library joined with other area agencies to develop the Elgin Information Network (EIN). The EIN, a DOS-based community bulletin board sponsored by the St. Thomas Canada Employment Centre, constituted a first step toward the general goals of a) encouraging Elgin residents to develop knowledge-based industry, and b) obtaining new, sharable information resources for the Library. The EIN was launched on June 1, 1994. The Library has also strongly supported the development of an Internet community network,

HOMEtown. HOMEtown is to provide individual access to community and regional information and selected Internet resources across the southern Ontario counties of Huron, Oxford, Middlesex, Elgin and Perth, including the municipalities of London, St. Thomas, Woodstock and Stratford, among others.

The missing element proved to be training. Following community-wide discussions and successful grant applications, the Library became the broker for the project, known as the Elgin & St. Thomas Community Centre for Information Access. The Centre is a drop-in centre for casual access, staffed in large part by volunteers. Among its activities are one-on-one introductions to information technology, short "courses" to groups of seven or eight, regular programs for audiences of up to 80, remote access to selected resources from carefully chosen sites in Elgin County and the Internet, and active involvement as a technical resource for related projects in Elgin County and St. Thomas.

The Centre segment has an 8-workstation Local Area Network (LAN) and occupies the Library's Board room on a long-term rental. The Centre's LAN is supported by a file server, a UNIX file server, and a telecommunications server for agency dial-up using CITRIX (a Windows environment product).

The other LAN segment is the Library's own LAN, comprising 23 work stations, a file server, a UNIX server (with 8 dumb terminals), a Novell Accesserver, a CITRIX server, and two CD-ROM servers. The two segments connect by means of a router.

The centre is connected to a London-based Internet provider, Inter-Com. The Inter-Com connection is also through a 56K dedicated line.

The response to the opening of the Centre has been more than encouraging, growing daily to daunting. A particularly poignant moment occurred a couple of weeks after the Centre opened: a pre-teen and a senior-senior sitting at adjacent workstations (the two had never met) spent a wonderful hour helping each other through the registration process and then through the functions of the system. In an earlier paradigm, it might have been a book the two were reading to each other. It was, in fact, within the Library context that the pleasure of knowledge was shared between the two.

9.11 Government Information

Governments should make government information freely available electronically on the information highway and enable public libraries to provide public access to this electronic database.

9.12 Pilot Projects

The newness of the information infrastructure means that we lack models and experience of the new governance structures, collection management tools, access systems, and digitalization processes and issues. The Coalition recommends that federal funding be provided to libraries to develop pilot projects that will define and create a digital library as a model for implementation across Canada.

The Government of Canada should fund pilot projects that:

- demonstrate and evaluate the benefits, costs and issues of Internet use by public libraries, library networks and provincial library organizations.
- examine the effectiveness of Internet usage by librarians for answering reference questions, and analyze the resources available on the Internet for timeliness, scope, and ease of use.

9.13 Public Awareness

The Government of Canada, through the National Library of Canada, library associations and the Coalition for Public Information, should provide support for an awareness campaign on the provision of public Internet access through the public library.

10. THE NEXT STEPS

As stated in the Terms of Reference, this study begins to assess the state of readiness of Canada's public libraries to serve as public access points to the information highway. Although preliminary in nature, the findings in this study indicate tremendous potential for a functional, reasonably-priced public access network enabled by the public library infrastructure. Clearly, a number of issues require much more intensive study, particularly those identified in .4 Content Issues.

Other critical areas requiring more work are those of funding, training programmes and pilot study development.

It is proposed that Terms of Reference be developed for PHASE II of this study that would address the issues listed above, and allow the development of criteria and participation formulae for shared responsibility grant programmes at the Federal, Provincial and Municipal levels.

The Coalition for Public Information is fully prepared to work with Industry Canada in developing such terms of reference.

APPENDIX "A": PROVINCIAL REPORTS.

I. ALBERTA

Basic Statistical Data: (from Public Library Statistics 1993)

Population of the Province:		2,574,890
Population Served by Public Libraries:	2,459,937	

There are 17 municipalities serving populations over 10,000. Twenty nine (29) libraries serve populations between 5,000 and 10,000. Almost 50 % of the libraries/ service outlets in the province serve populations under 1,000.

Percent of Population Served:		95.5%
Number of Individual Library Systems:	9	

Under the Libraries Act, Edmonton and Calgary are not considered library systems, but for the purposes of this survey they have been included as centres serving multiple locations.

Library system is defined as a regional library system, established by agreement between two or more municipalities and/or school authorities as provided for under Section 19 of the Libraries Act, Statutes of Alberta, 1983, K.L-12.1. A system is supported by local taxes and is governed by a board consisting of one member appointed by each participant, two members appointed by the Lieutenant-Governor in Council and additional members appointed in accordance with Libraries Regulation. There are 7 library system boards: Chinook Arch Regional Library, Marigold Library System, Northern Lights Library System, Parkland Library System, Peace Library System, Shortgrass Library System, Yellowhead Library System. There are 177 public libraries and service outlets in the 7 regions.

There are approximately 80 public libraries that do not belong to a regional library system, but operate independently as municipal libraries. A municipal library is defined as a public library established by passage of a by-law under Section 9 of the Libraries Act, Statutes of Alberta 1983, K.L-12.1. A municipal library is supported by municipal taxes and is governed by a board of not less than five and not more than ten members, all appointed by the council of the municipality. Not more than two members of council may be members of the Board. There are 253 municipal library boards, including those receiving service from library systems. (Of these 57 are school-housed public libraries.)

There are also 16 community libraries, and 41 service outlets, where the county, municipality or regional library board is the board of record.

Number of permanent locations: 310

Number of Public Library Systems with:

Automated Catalogues (OPACS): 45

All 7 regional library systems have on-line union catalogues. Some are available only in-house on local area networks. Two regions have all of their libraries linked to their central computer (25 libraries), one region has 4 libraries connected on-line, one region provides the union catalogue on diskettes so the member libraries can mount it on a local OPAC. It is estimated that approximately 45 libraries, including system and non-system libraries have OPACs available in their libraries and that most of these are in communities serving populations over 7,500. The number of OPACS in libraries serving under 7,500 population is not known, although there is considerable movement towards automation in the smaller libraries, mostly to stand alone systems, with public access terminals in the library.

Dial In Access: 17

All of the 7 regional library system headquarters have OPACS, but not all have on-line access outside of their own site or local area network. All of the member libraries in two of the regional library systems (25) are connected to the main server in headquarters. One regional system has 4 of their largest libraries connected. Four regional systems have no connectivity and are looking at CD ROM catalogues because of the high cost of telecommunications. Of 177 public libraries served by regional systems, it is estimated 10 of these provide dial-in access to their public. Of the non-system libraries serving populations over 10,000, 7 have dial-in access. It is not known how many, if any, provide dial in service in communities serving less than 10,000 people.

It is estimated that 17 of the 310 service outlets in the province provide dial-in access to their records and that with few exceptions, they serve populations over 10,000.

Automated Circulation Systems: 75

It is estimated 75 libraries in Alberta have automated circulation systems. With few exceptions, all of the libraries serving populations over 7,500 do and many of these have more than one terminal in a local area network. Two of the regional library systems (Chinook Arch Regional Library and Shortgrass Library System) have centralized circulation systems whereby all of their member libraries are linked into a common circulation system at headquarters (25 libraries). Many of the smaller libraries, serving populations under 7,500 have stand alone circulation systems.

On-line Services (Reference): 5

Edmonton and Calgary offer on-line renewal and reserve services, as do Chinook Arch and Shortgrass Regional Libraries. Data on other libraries is incomplete, but it is estimated that most of the libraries serving populations over 25,000 have or are planning to provide on-line services in the future.

CD-ROMS: 25

The four northern regional library systems (Peace, Northern Lights, Parkland, and Yellowhead) are currently working on developing a CD ROM catalogue of their combined holdings. Others offer access to CD ROM products at a work station in their libraries or have the capability of doing so.

Are the public libraries in your province/territory supportive of the concept of :

* **networking amongst themselves?** [2]

The Alberta Public Library Interlibrary Loan Network, which the Libraries Branch coordinates, already provides an infrastructure upon which to build an electronic network. It is partially automated now, is currently involved in a pilot project where connectivity is provided through the government network. There is strong support from most of the libraries for networking.

Strategic planning meetings held throughout the province by the **Libraries: Alberta Strategic Alliance for Planning Steering Committee (L:ASAP)** obtained strong support for an Alberta Library Network which would include all types of libraries in a seamless interconnected network. L:ASAP expects to present their strategic plan at the Alberta Library Conference in April/May/95.

* **networking with libraries in other provinces?** [3]

Except for a few of the larger centres, like Edmonton and Calgary, who have their own accounts, the Libraries Branch does all of the out-of-province interlibrary loan searching for public libraries in Alberta. The Libraries Branch is not linked into Internet for this purpose as yet. The Branch also represents the public library interests in negotiations with other provinces, and the National Library of Canada on policy and protocol issues.

Are there regulatory requirements/issues that would either aid or inhibit such networking?

Alberta has no provincial information policy or coordinated position with regard to the development of the information highway. There is no single agency in Alberta or in government with responsibility for this or for library development across all sectors. The Libraries Branch has responsibility for public libraries under the Libraries Act and has identified networking as a priority in its three year business plan but has no funds in place with which to accomplish this.

The province is in a transition following significant changes in governing legislation regarding school boards, municipalities and government services. Regional and inter-agency boards and councils are being amalgamated and many public services are being privatized, including telecommunications and Internet service access. User fees are being applied to government services and products at all levels.

There is fierce competition for control of the Internet in Alberta. Alberta Public Works Supply and Service and ARnet are privatizing the management of Internet, the government network(AGNpac) and telecommunications generally.

The Libraries Act and funding structure is under review (Public Library Review Committee) and recommendations will be submitted to the Minister this summer. Decisions coming out of this review will have a significant impact on library legislation, funding and future development.

All public libraries in Alberta are required by Regulation to have resource sharing policies for their libraries. These support networking, as does regional library system development and the provincial resource sharing policy document "Principles of Resource Sharing for Alberta Public Libraries". The resource sharing agreement signed by the 7 regional library systems and the Libraries Branch commit these partners to share their resources with each other as well as extend interlibrary loan service to non-system libraries with coordination provided by the Libraries Branch.

Are there funding requirements/issues that would either aid or inhibit such networking ?

The prohibitively high cost of telecommunications and the inequitable distribution of lines, as well as insufficient band width outside of the Edmonton-Calgary corridor impedes progress in networking. This is especially a problem in northern Alberta where 60% of the land mass has 10% of the population and telecommunication costs are time-distance specific.

There is a wide range of different operating platforms, library operating systems and communication software in libraries. The need to retool library hardware and software and the need for interface technology and expertise is inhibiting development in this area.

The Libraries Branch is currently developing a position paper, seeking Ministerial approval for public libraries to become sponsored clients of the department. This would enable them to benefit from all of the discounts in telecommunications and computer supplies enjoyed now by government departments.

Lack of funding to develop a telecommunications infrastructure for libraries is a significant deterrent. The Alberta Library Trustees Association has made presentations to the Lotteries Review Committee recommending lottery dollars be made available for the development of an electronic infrastructure to connect all Alberta public libraries, and to connect all public libraries to the Internet. They are also preparing a position paper to take to the Minister of Alberta Community Development recommending a strategy to position public libraries as community access centres for government information.

The Library Association of Alberta is preparing a position paper on the need for an Alberta Information Policy.

Are there governance requirements/issues that would aid or inhibit such networking ?

There is no governing structure in Alberta, other than the Libraries Branch, Alberta Community Development, to coordinate development of a consistent on-ramp for public access to the information highway. Governance structures differ from region to region and sector to sector. All of these related bodies are in a state of change as a result of changing regulatory, governance and funding structures.

The current state of connectivity amongst libraries in your province/territory.

Twenty-four public libraries and regional library system headquarters are currently involved in a pilot project to test the cost efficiency and effectiveness of searching each others databases and sending interlibrary loan messages through the Alberta Government Packet Switching Network (AGNpac). The libraries involved, which include all of the regional library resource centres, Edmonton, Calgary, Red Deer, Ft. McMurray and a selected number of small system libraries are connected to each other and to the Libraries Branch through AGNpac. Library access to the Internet through the government gateway was an intended component of the project but has not been implemented because of the government reorganization and privatization of the government telecommunications networks. This project will be assessed in August, when recommendations on the future of the network will be made to the Minister.

Define/describe the existing network that are in place in your province/territory that:

*** connect public libraries.**

Alberta Public Library Interlibrary Loan Network: See description in #5 above.

Chinook Arch Regional Library: Twenty member libraries of the Chinook Arch Regional Library system located in Lethbridge, Alberta, are connected to their headquarters using dedicated data lines to access the centralized Dynix system. All functions, including cataloguing, circulation, acquisitions, and interlibrary loan messaging are facilitated through this centralized system.

Shortgrass Regional Library system in Medicine Hat is using a similar system to connect their 5 member libraries. They also use the Dynix operating system and have offered full connectivity to their libraries for over two years.

Marigold Library System operates a dial in service for 9 of their largest member libraries. This service uses datapac to dial in to the Marigold MINISIS system at their headquarters in Strathmore, Alberta and facilitates interlibrary loan using MARSHAN software.

SANet: This is a sub-set of the Alberta Public Library Interlibrary Loan Network. Three regional library resource centres in southern Alberta and Calgary Public Library use the AGNpac network to connect with each other and search each others databases. Interlibrary loan requests are filled within the SANet group before being forwarded to the Libraries Branch for further searching. This group is experiencing great success with placing of requests directly on two of the four centralized regional automation systems.

Northnet: This is also a sub-set of the Alberta Public Library Interlibrary Loan Network. It involves two searching cycle groups, including four regional library resource centres, Edmonton Public Library, Ft. McMurray and Red Deer. They also use AGNpac to search each others databases and forward interlibrary loan requests directly to each other through the Libraries Branch's VINES e-mail service on AGNpac.

Interlibrary Loan requests not filled within these cycles are forwarded to the Libraries Branch for further searching. The Libraries Branch also coordinates searching for all non-system libraries and exchanges unfilled interlibrary loan lists between SANet and Northnet.

*** connect public libraries and academic (university/college) libraries.**

Shortgrass Regional Library and Medicine Hat Community College are connected to each others databases using dedicated phone lines, have public access terminals and reciprocal borrowing arrangements.

Red Deer Public Library and Red Deer Community College are connected to each others databases on MultiLis, have public access terminals and reciprocal borrowing arrangements. Discussions are underway to include the Parkland Regional Library system in Lacombe in this network.

Peace Library System/ Grande Prairie Public Library and Grande Prairie Community College are connected to each others databases through dedicated phone lines.

Athabasca University and Athabasca Public Library are currently negotiating an on-line connection.

Augustana College and Camrose Public Library are negotiating an on-line connection.

NEOS (Networking Edmontons On-Line Systems) is a consortium of various types of libraries in the local calling area in and around Edmonton who share the DRA system at the University of Alberta on a cost share basis. This consortium has a union catalogue on the DRA system that includes all of the collections at the university, twenty government and health science libraries and several corporate and local college libraries. Connectivity is through a combination of direct dedicated lines and Internet. It is linked to the Edmonton Public Library through their Freenet service. All public libraries in the Edmonton area can access the GATE via dial-in, Internet, or Freenet.

NORALINK: This is a network of college libraries in northern Alberta that are linked to Athabasca University, Alberta's distance education university, which in turn is connected to the University of Alberta Library system. Two of the regional public library systems are connected to Athabasca through their resource centres in Grande Prairie and Lloydminster. Athabasca University has placed computer terminals in the public libraries in several locations throughout the regions and pays for the line charges for dial in access to their BuCat system. Reciprocal borrowing arrangements and public access are still being worked out in this group.

*** connect public and school libraries.**

Two of the regional library systems, Parkland Library System and Yellowhead Library System serve schools as well as public libraries in their regions. Other regional library systems provide contract services (primarily development of automated catalogues) for school districts in their areas. None are linked electronically as yet.

Edmonton Public Library and Edmonton Catholic School Board are linked to each others systems using public access terminals and connecting through the Freenet and local dial in services.

Similar arrangements are being discussed with school boards in Calgary.

*** connect public libraries to the National Library of Canada.**

The Libraries Branch has an account with the National Library of Canada and does all of the out-of-province searching and forwarding of interlibrary loans to the National Library on behalf of the Alberta Public Library Interlibrary Loan Network. The larger libraries such as Edmonton and Calgary have their own accounts. The Libraries Branch is not connected through Internet. Edmonton and Calgary are.

*** connect public libraries to other information providers (community information centres)**

Edmonton has a Freenet which is accessible to all libraries in the local calling area. Other centres can access it only via long distance. Currently discussions are going on regarding reciprocal borrowing arrangements with the public libraries in the greater metropolitan area in and around Edmonton.

Calgary has a Freenet with a strong business focus.

Freenets are planned or being discussed for implementation in Ft. McMurray, Red Deer, Lethbridge, and Grande Prairie.

What major initiatives in technology-based resource sharing and network development are planned?

See explanations on L:ASAP initiative described in #4 above.

Libraries Branch Business Plan includes strategies to develop an infrastructure for public libraries including access to Internet. AGNpac initiative described above, is linked to this.

The Libraries Branch will be sending out an RFP in the next few months to undertake a major research study to determine the readiness of Alberta public libraries to participate in a fully automated information network, including access to other types of libraries, Internet and the information highway. The study will include an inventory of hardware and software, telecommunications and is expected to come up with recommendations on the infrastructure and costs of developing and operating a fully automated Alberta public library network.

Within government, an Interdepartmental Committee on making government information available on the World Wide Web has been formed and is looking at the technological requirements for this as well as the content and policy issues. Lucy Pana, Director of Libraries Branch, Alberta Community Development sits on this committee.

How many public library systems are connected to a Free-Net or Community Network.?

Edmonton Freenet-unknown how many libraries access it.
Calgary Freenet - unknown how many libraries access it.
Freenets planned in Lethbridge, Ft. McMurray, Red Deer, Grande Prairie.

How many public libraries in your jurisdiction are connected to the Internet ?

It is estimated only 14 libraries in Alberta are currently connected to the Internet, although 4 more are planning on connecting in the near future.

* **For administrative purposes:** 12

* **For service purposes:** 4

* **For public access:** 2

From where do they obtain this connectivity ?

* **Provincial Government:** none

* **Freenet:** 4

* **University:** 6

* **Commercial Service:** 4

Access to the Internet in Alberta has been mostly through commercial vendors and/or through personal contacts of staff through associations or university college sponsorship. Several libraries within the local calling area of Edmonton are linking through the Edmonton Freenet, which is a limited access.

Several private vendors, including CCInet, AGT, Shaw Cable are engaged in aggressive marketing at the local level. Much of this is still in the negotiation and development stage. Development is fragmentary, and disparate. Several vendors are signing agreements with local agencies to provide Internet nodes in various local calling areas in Alberta. All of this is commercial access and does not provide for public access through public libraries. Cost is a major factor.

What are the major network connectivity issues you are facing now ?

***Funding:** **long distance charges** - Telecommunication costs are prohibitively high in Alberta, lines are inequitable and disparate and as long as charges are tied to time and distance rural and remote locations will be severely disadvantaged. All of the libraries contacted identified this as the major deterrent to development.

hardware costs - Lack of capital funding for small libraries places them at a disadvantage. Ongoing maintenance cost and rapidly changing computer technology is also a concern.

connectivity costs- Of major concern are the costs of retooling and developing interfaces between the variety of incompatible library systems, communication software and telecommunication platforms.

***Training**:
The lack of technical expertise and/or unavailability of technical expertise at the local level, especially in the rural areas, is a major concern. There is currently no funding available for training, no coordinated approach and no body with primary responsibility for this and the need is great.

***Content:** **copyright**- Library liability, especially with public access terminals in the library, and accessing what information is on the Internet is a concern. There are no policy models to work from and no clear direction.

licensing issues- Licensing issues are of concern. Not only the cost of obtaining licenses for providing access to various databases/services on the Internet, but also for CD ROM products, mounting full text databases on local networks, and printing from other databases. Providing access to library databases can also effect system licenses. This brings up the whole issue of cost recovery and user fees versus free public access.

***Other** document delivery costs and logistics.
Security
Infrastructure costs
Standards
Development of staff expertise
Contractual agreements
Warranties
Ongoing troubleshooting and maintenance.

Are there any current initiatives in your jurisdiction to provide universal access to the information highway? (Please describe).

LAA position paper on Information Policy described earlier in 5.1.

What would it cost to provide connectivity to the public libraries in your province?

No data. We are unable to determine or provide the cost of developing an infrastructure or providing connectivity for any of the areas listed below. This is one of the purposes of the research project the Libraries Branch will be doing in the next few months.

To what extent has this funding been promised, secured, allocated?

No funding has been secured, promised or allocated at the moment. It is expected that The Alberta Library Trustee Association position paper will be recommending the use of lottery funds for development of the public library telecommunications infrastructure. The paper has nt been drafted yet.

Which elements are being funded, and what more do you need ?

Everything is needed. Funding for the infrastructure is needed, Funding for hardware, software, connectivity, staff training are all needed. It has yet to be determined which sources of funding are most appropriate for which aspects of the project.

What role could the federal government play in developing a Canada-wide library network infrastructure?

Enhanced role for the National Library ? YES

Policy Development ? YES

Regulation ? Emphatically yes.

Legislation ? YES

Tax policies ? YES, Exempt public libraries from having to pay taxes for telecommunications or network development.

Grant programs ? YES

Operational funding ? This should be a local responsibility but some seed money for development programs would be helpful.

Training programs ? YES

Procurement ? Subsidy funding or programs would help.

Pilot studies ? YES

What do you see as the major issues to be addressed and resolved if the public library infrastructure is to be used for public access to the information highway?

Accessibility is a major issue. There needs to be a guaranteed public lane on the information highway that protects the public interest and their right to access information.

Affordability is another major issue. The cost of telecommunications is a major deterrent to public libraries becoming connected to the information highway, as is the cost involved in obtaining or retooling hardware, developing interface software, obtaining and maintaining connectivity and ongoing operational costs.

There needs to be an infrastructure put in place that can handle the traffic, not just along the main avenues but in remote and geographically disparate areas.,

As tax supported institutions, libraries should be exempt from long distance charges or at least have reduced rates or funding support to be able to access the information highway. Government services and information can be provided via the Internet only if there is broad public access, at low public cost, with an infrastructure that supports it and a policy and an independent body that organizes and runs it to serve the public good.

Funding is needed to ensure libraries and other publicly funded institutions can acquire the equipment, skills and training they need to help users navigate "the Net" and access the information they need.

Standards is another issue. Network standards need to be developed to ensure the interoperability of various networks and telecommunication links so access is seamless and broadly available. This is a role for a national body.

The need for a National Information Policy and a Provincial Information Policy is critical. The public and publicly funded institutions need a voice in determining who gets connected at what cost to what kinds of information and under what circumstances. This national policy could include incentives that protect the public interest and requirements that ensure their interest is protected. Issues of security, library liability and affordable access should be included in the policy.

There also needs to be National and Provincial Authorities to guide the development of the infrastructure and regulates the activity on the information highway.

Training and the development of the necessary skills and expertise at the local level is another major issues. Even if libraries can obtain the necessary funding for development, they will need a broad range of skills to maintain service on an ongoing basis.

II. BRITISH COLUMBIA

Basic Statistical Data:

Population of Province: ..... 3,284,539 (1991 Census)
Population Served by Public Libraries: 3,213,327
Percent of Population Served: 97.77%
Number of Individual Library Systems: 88*

*	Regional Library District		3
	Integrated Public Library System	1	
	Federated Public Library System	1	
	Municipal Public Library		18
	Public Library Association	48	
		[Reading Centres]	
17			

Number of Permanent Locations: 246

Number of Public Library Systems with:

Automated Catalogues (OPACS)	35
Dial-in Access	11
Automated Circulation Systems	35
On-line Services (Reference)	9
CD-ROM Services	27

Are the public libraries in your province supportive of the concept of:

* networking among themselves ..... Level [4]
* networking with libraries in other provinces/territories ..... Level [3]

Are there regulatory requirements/issues that would either aid or inhibit such networking?
Standards for participation in Interlibrary Loan Network are implicit and support networking among publicly funded libraries in province.

Are there funding requirements/issues that would either aid or inhibit such networking?
Resource sharing grant program based on loans made to publicly funded libraries within the Province as well as compensation for loans made to Canadian libraries.

Are there governance requirements/issues that would aid or inhibit such networking?
No.

5. The current state of connectivity among libraries in your province.

- **public libraries:**
  public libraries have e-mail services available through Telecom Canada's Envoy 100 network;

- no connecting Internet network at present. Three libraries currently connected to Internet as separate domains (Vancouver, Richmond, Victoria). Some libraries connect (dialup/dedicated line) through commercial Internet service suppliers;

  interlibrary loan traffic managed over a client server network which establishes dialup connections with each library overnight to pick up, distribute and update status on interlibrary loan transactions.

- **public and academic:**
  no connecting network at present.

  planning for a "provincial learning network" (PLN) would establish a province wide network connecting public libraries, schools, colleges, universities, training institutes, museums and government offices/services.

- **public and school:**
  no connecting network at present. See PLN above.

- **public libraries to NLC:**
  public libraries have access to NLC through Envoy 100 network. Some libraries have e-mail or other network services available via the Internet.

- **public libraries to other information providers:**
  some libraries have access to some other information providers via Internet services;

What major initiatives in technology-based resource sharing and network development are planned?

i) LSB will offer e-mail service on a dial-up basis (via terminal emulation/SLIP/PPP) during fiscal year 1995/96. It is likely that additional internet services will be made available for administrative (not public access) during this same period.

ii) The Province continues to plan for a multi-jurisdictional province-wide network infrastructure which will provide a full-range of TCP\IP based services to all communities. Expectation is that the 1995/96 throne speech will provide details of government's commitment.

How many public library systems are connected to a Free-Net or Community Network?

Vancouver Free-Net ..... Vancouver Public Library
..... Richmond Public Library
..... Port Moody Public Library
..... Other Lower Mainland Libraries through dial-in or gateway services
..... Other libraries through other Free-Nets

Victoria Free-Net..... Greater Victoria Public Library
.....Vancouver Island Regional Library branches planned
..... Other libraries through other Free-Nets

CIAO (West Kootenay).....Kootenay libraries through dialup
..... Other libraries through other Free-Nets

Prince George Free-Net .....Prince George Public Library (gateway access)
..... Northern libraries through dialup/dedicated line
..... Other libraries through other Free-Nets

Sea-to-Sky Free-Net (Squamish).....Area libraries through dialup/dedicated line
..... Other libraries through other Free-Nets

Nanaimo SchoolsNET ..... Other libraries through other Free-Nets

Campbell River FreeNet Association ..... Campbell River Branch
(Vancouver Island Regional Library)

Mount Arrowsmith Free-Net Association ..... Parksville & Qualicum Branches (planned)

Cranbrook Community-Net (organizing) .....Cranbrook Public Library

Rocky Mountain InfoNet(organizing)..... Sparwood Public Library

How many public libraries in your jurisdiction are connected to the Internet?

- administrative purposes..... 4
- service purposes..... 4
- public access 1

From where do they obtain this connectivity?

- Provincial Government 0
- FreeNet 1
- University (BCNet) 2
- Commercial Service 1

Network Connectivity Issues:

Funding Long Distance Rates:

Short term extension of e-mail service would be by dialup through B.C. Systems Corporation Universal Dial network. UDIAL is based on accessing local phone numbers; 800 service provided for remote communities.

Funding Hardware Costs:

Hardware costs are currently seen as the responsibility of the local library.

Connectivity Costs:

Connection costs are currently seen as the responsibility of the local library. Should the Provincial Learning Network become a reality, connection costs between communities would become a provincial responsibility; building connection costs/associated hardware would be responsibility of local library. It is possible that assistance with hardware costs would be available.

Training:

Training is an ongoing cost and would be borne by the provincial library agency, local library, and provincial library associations.

Content (Copyright):

Not an issue at this stage of development.

Content (Licensing issues):

Being dealt with regionally in some areas (InterLINK; East Kootenays).

Not an issue at this stage of development.

Are there any current initiatives in your jurisdiction to provide universal access to the information highway?

Provincial Learning Network (PLN). Degree of "universality" would be determined when project receives formal government commitment.

The Branch has funded connectivity for ILL through the client/server model for all public libraries at an annual cost of $30,000. Full network access for all public libraries requires commitment of government to provide the network infrastructure reaching all communities. Other than on a dialup basis, this is not fully in place. Provincial Learning Network proposal calls for an investment of $10 million. Branch has delayed planning full network connectivity for public libraries in favour of the PLN proposal.

The extent of direct patron access to Internet resources is not actively under consideration by B.C. libraries at this time. Until full network connectivity is realized and library resources on the Internet are identified and developed, direct patron access is a secondary goal.

To what extent has this funding been promised, secured, allocated?

Anxiously awaiting government announcement of Provincial Learning Network commitment.

Which elements are being funded, and what more do you need?

Awaiting announcement to see which elements of program will be centrally funded.

What do you see as the major issues to be addressed and resolved if the public library structure is to be used for public access to the information highway?

- funding for:
  - necessary hardware/access points;
  - required staffing levels;
  - network operating costs.

- staff issues:
  - training;
  - technical skills upgrading.
- access issues:
  - freedom of information/censorship issues;
  - copyright issues;
  - licensing issues;
  - accuracy of Internet resources
- jurisdictional issues:
  - relationship of libraries with Freenets;
  - relationship of libraries to commercial internet suppliers;

III. MANITOBA

Basic Statistical Data:

Population of the Province/Territory: 1,091,942

Population Served by Public Libraries: 886,881
Winnipeg 610,844
Rural 276,037
Percent of Population Served: 81% outside Winnipeg

Number of Individual Library Systems: 45 regional and Winnipeg Public Library
Number of Permanent Locations: 79 rural non Winnipeg

Number of Public Library Systems with:

Automated Catalogues (OPACS): 18 rural

Dial-In Access: 1

Automated Circulation Systems: 18

On-line Circulation (References): 2

CD-ROMS: 16

Are the public libraries in your Province/Territory supportive of the concept of:

*Networking amongst themselves?

Supportive Not Supportive
[1] [2] [3] [4] [5]

*Networking with libraries in other Provinces or Territories?

Supportive Not Supportive
[1] **[2]** [3] [4] [5]

Are there regulatory requirements/issues that would either aid or inhibit such networking? Approval from Provincial Government for Manitoba Union Catalogue to be put on Internet.

Are there funding requirements/issues that would either aid or inhibit such networking? A flat rate that is distance insensitive is required.

Are there governance requirements/issues that would aid or inhibit such networking? Individual policies and institutional mandates can be a barrier.

The current state of connectivity amongst libraries in your Province/Territory. Public libraries initiative MERLIN to link rural public libraries

Define/Describe the existing networks that are in place in your Province/Territory that:

*connect public libraries: see Appendix A

*connect public and academic (university/college) libraries

*connect public and school libraries: see Appendix B

*connect public libraries to the National Library of Canada

*connect public libraries to other information providers: see Appendix A

What major initiatives in technology-based resource sharing and network development are planned? See Appendix A

How many public library systems are connected to a Free-Net or Community Network? Winnipeg Public Library

How many public library in your jurisdiction are connected to the Internet?

*for administrative purposes: 4

*for service purposes: 4

*for public access: 1

From where do they obtain connectivity?

*university: 4

What are the major network connectivity issues you are facing now?
Funding: long distance rates: high costs or rates to access databases remotely
Content: copyright
licensing issues

Other: lack of coordination to the various information highway projects

Are there any current initiatives in your jurisdiction to provide universal access to the information highway?

Please describe: Merlin PLuS for ILL, PLS Project. Blue sky, Freenet, Manitoba Government Backbone

What would it cost to provide connectivity to the public libraries in your Province?

For the purpose of ILLO: $100,000 per annum

For ILLO and Reference: $130,000 per annum

For ILLO, Reference, and Administration: $130,000 per annum

For direct patron to Internet resources: $240,000 per year - would include ILL, Reference and Administrative use.

What do you see as the major issues to be addressed and resolved if the public library infrastructure is to be used for public access to the information highway?

Pros: equitable access
Cons: funding for connectivity/lending policies defined/ education and training security and privacy/fees. These are not so much "cons" as issues to be raised and resolved

Appendix A

MANITOBA ELECTRONIC RURAL LIBRARY INFORMATION NETWORK

Public Library Services (PLS) Branch of the Manitoba Department of Culture, Heritage and Citizenship is guiding and supporting the automation of all rural public libraries to develop an integrated provincial library system known as the Manitoba Electronic Rural Library Information Network (MERLIN).

The Manitoba Union Catalogue is the central component of PLS's **Manitoba Electronic Rural Library Information Network (MERLIN)**.

The **Manitoba Union Catalogue** is the database for the provincial library system and holds the collections of PLS and all rural public libraries in the province.

Public libraries have begun development of local automated library systems with their own catalogue and circulation systems. These systems will be integrated with the PLS provincial library network to form MERLIN.

MERLIN will provide access from regional libraries to the central catalogue at PLS. Public libraries will be able to dial into the Manitoba Union Catalogue on PLS's computer system and directly search the database. Libraries will be able to share resources directly, without going through PLS. For items located at other libraries or electronically, libraries will contact PLS.

At the present time the Manitoba Union Catalogue lists books from PLS and certain other Manitoba public libraries. In the near future all rural public library holdings will be on the database.

MERLIN PILOT PROJECT

Public Library Services and four library regions are completing a pilot project from December 1994 to March 1995, to test and implement the provincial network. The pilot sites will have dial-in access with Manitoba Telephone System Datapac service to the Manitoba Union Catalogue database. Libraries will be able to directly search the catalogue for lists of books from PLS and other Manitoba public libranes.

FUTURE:

MERLIN will be refined and expanded to include other information tools to provide an "Information Highway" on-ramp for Manitoba's rural public libraries and their patrons.

The major obstacle to electronic communication between libraries is the cost of long distance telephone line connection from one library's computer to that of another library.

Ideally, in the future, Manitoba's rural communities will have cost-effective connections to the Internet. The **Internet** is a collection of world-wide computer networks that provides many features including electronic mail and electronic transfer of documents between locations.

Internet access would further enhance the sharing of electronic catalogues between libraries and direct public access to library services. Provision of public access to the Internet within libraries promises to expand and accentuate the role of Manitoba's public libraries in the "global information community".

Appendix B

LINKING LIBRARIES:

Linking Libraries is an initiative of Manitoba Education and Training. It is
"...a library linkage plan which, when implemented, can make the collective holdings of all Manitoba libraries available to all Manitoba students."

Consultants were hired to:
1. Consult with Manitoba library stakeholders to identify issues/problems related to linking libraries and developing implementation strategies.

2. Provide an analysis which will have the following objectives: that all libraries, including school, public, college, university, special and government coordinate efforts to provide an effective and accessible supply of library information resources and services to all Manitoba learners.

3. Submit a Draft Report on or before February 24, 1995 and a Final Report on or before March 10, 1995 which will recommend implementation strategies and include a budget."

IV. NEW BRUNSWICK

Are there regulatory requirements/issues that would either aid or inhibit such networking?

The fact that the CRTC regulates NBTel rates which are far from favourable does inhibit networking in New Brunswick.

Are there funding requirements/issues that would either aid or inhibit such networking?

The public library system has received an infusion of funds in the order of $1.25 M through the Canada/New Brunswick Infrastructure Program for the purpose of automating the regional and public libraries. Although, as part of the project, the five regional library headquarters and the five resource libraries (main libraries) in the province will be provided with online access to the INLEX database of public library holdings, all other service points will be equipped with CD-ROM catalogues. The plan is to eventually have all public libraries online, so this is seen as an interim measure. As yet, however, no funds have been allocated to cover telecommunications costs.

Furthermore, the workstations which are being acquired by the public libraries through this project will be dedicated to library functions such as provision of a catalogue and circulation. More workstations will need to be acquired, as funds become available, to provide access to the Internet. Only a couple of libraries are presently offering this access to the public.

Are there governance requirements/issues that would aid or inhibit such networking?

The public library system in New Brunswick is in fact highly suited to any networking project. The system is a provincial one, meaning that any public library funded by the province operates within the regional library system and under the jurisdiction of the New Brunswick Library Service. Although the regional libraries are governed by independent boards, there is a high level of cooperation amongst the regions. Library users have access to all materials within the public library system and can borrow from and return materials to any service point within the system. The organizational structure, then, lends itself well to networking initiatives.

Other factors that would aid networking is the high degree of cooperation amongst different types of libraries in the province, particularly public and academic libraries.

One inhibiting factor may be that government-funded library "systems" - public, college, and school - all operate under different government departments which slows down the decision-making process. However, a body known as the Provincial Library Forum has been established to encourage cooperation amongst the different types of libraries and amongst the different departments. Already the Forum has formulated principles to govern the development of library automation, principles which promote standards (MARC format, Z39.50, etc.) that make connectivity and networking possible. These principles have received approval from the four government departments involved.

The current state of connectivity amongst libraries in your province.

Define/Describe the existing networks that are in place in your province that:

connect public libraries: The five regional headquarters have online access to the INLEX database of public library holdings. Also three of the resource libraries in the system have an OPAC situated in the reference area. The plan is to extend OPAC to the five resource libraries in the province, and this under the terms of the Infrastructure project. The long-term plan is to connect all 61 public libraries in the system.

connect public and academic (university and college) libraries: The regional libraries are able to access the University of New Brunswick online catalogue (Pheonix, soon to be Quest) and the Université de Moncton catalogue (Eloise). The reverse is not true, although the potential is there. Up until now, the public library database on INLEX has not been large enough to warrant much effort in making it available online to academic libraries or others. However, the public library system is now embarked on recon and the database is growing rapidly. We will begin to explore access to the catalogue from remote sites. The community college libraries have discussed a provincial approach to automation but have not as yet reached a consensus.

connect public and school libraries: All schools within the province are being equipped with LANs and with Internet access. So although there is no connectivity between school and public libraries at the moment, the potential is there for networking somewhere down the road. The ten school-public libraries in the system will, of course, benefit immediately from any advances made on either the school or the public library front.

connect public libraries to the National Library of Canada: NBLS provides a centralized ILL service to four of the five regional libraries and accesses Dobis for this purpose. Saint John Regional Library also accesses Dobis for ILLs. This coming year, NBLS will study the possibility of making the INLEX database available to the NLC for the purposes of resource-sharing.

connect public libraries to other information providers (e.g. community information centres): Although there have been some discussions around this, nothing has been done so far. The government has recently provided seed funding to a project known as NetLearn NB that would provide, through the Internet, a single entry point to online information, e.g government information, library catalogues, indexes, art gallery and museum collections, credit courses, conferences, health information, etc. Public libraries are being considered as prime locations for NetLearn kiosks.

What major initiatives in technology-based resource sharing and network development are planned?

Building on what was reported to the PTLDC, the network study has been completed to determine the configuration of the public library network and to estimate the costs of the network. The recommended plan is a multi-year one. A copy of the study is included with this package.

Are there any current initiatives in your jurisdiction to provide universal access to the information highway?

There is a grave concern within government to provide universal access to the information highway. To signal the importance that he attaches to this and other information highway issues, the Premier, last year, appointed a Minister of State for the Information Highway. Earlier still, in 1993, the Premier appointed a Task Force on the Electronic Information Highway which published a report of its recommendations in March 1994. The recommendations dealt with such major issues as accessibility and affordability. Furthermore, it is a well-known fact that New Brunswick is one of the first provinces to have the key infrastructure in place to make the information highway accessible from every home and office. NBTel has established a fibre-optic ring around the province and now offers digital services to all its customers.

Apart from this, the government has provided a considerable amount of funding, through the Information Technology Investment Fund, for several initiatives including the establishment of LANs in schools, the automation of public libraries, etc. The government has also funded TeleEducation NB, a distance education network that facilitates the development and delivery of education and training in the province, and has provided seed money for the establishment of NetLearn NB, referred to earlier in this document.

The ultimate goal of automating the public library system, too, is to provide universal access to the information highway. So there are many initiatives that are furthering this goal.

To what extent has this funding been promised, secured, allocated?

As stated above, $1.25 M have been allocated for the automation of the public library system. However, no funding has been identified to cover the telecommunications costs for connecting the libraries. Also, funding has been provided to establish LANs in all the schools and to provide Internet access. Other initiatives that have been funded in whole or in part are TeleEducation NB, NetLearn NB, etc.

Which elements are being funded, and what more do you need?

As above. The Infrastructure monies allocated to the public library system will cover not only the purchase of hardware for the public and regional libraries, but also the installation of LANs at regional library headquarters, the acquisition of INLEX software for circulation, acquisitions, etc., and the implementation of recon. Again, a major concern is that no funds have been allocated to connect all the public libraries and to cover telecommunication costs. Also needed are additional computer workstations to provide access to the Internet as the ones that are being acquired will generally be dedicated to library applications, e.g. provision of the catalogue, circulation, patron files, etc. Funds could also be used to complete a study of the procedures, costs and other implications of providing library users with Internet access.

What role could the federal government play in developing a Canada-wide, library network infrastructure?

The federal government has a role particularly in policy development, regulation, provision of grant programs (The SchoolNet is a good start.) and the funding of pilot studies. Certainly the provinces will have to take a share of responsibility in developing the library network infrastructure. An enhanced role for the National Library would definitely be appropriate in this area. The NLC could itself conduct more pilot projects such as the one it is engaged in now on the storing and preservation of electronic information. The library community needs leadership as the role of the library worker changes along with the tools of the trade.

What do you see as the major issues to be addressed and resolved if the public library infrastructure is to be used for public access to the information highway?

The major issues which need to be addressed are accessibility, affordability and staff training.

V. NEWFOUNDLAND

Newfoundland libraries are very supportive of both province-wide and Canada-wide library networking. Currently several networks exist in the province. Memorial University and its regional college at Corner Brook are connected through the provincial network, NLNet. Community college libraries are connected to Stem~Net, the provincial education network. There are no networks connecting public libraries.
Some recent public library automation initiatives include: the introduction of an integrated automation system to provide efficient and effective cataloguing; on-line public access catalogues, and circulation functions for the St. John's Library System; and the computerization of the Gander Regional Resource Library, including a CD-ROM Network.

VI. NOVA SCOTIA

Basic Statistical Data:

Population of the Province/Territory: 936,700

Population Served by Public Libraries: as above

Percent of Population Served: 100%

Number of Individual Library Systems: 11

Number of Permanent Locations: 73

Number of Public Library Systems with:

Automated Catalogues (OPACS): 2

Dial-In Access: 2

Automated Circulation Systems: 2

On-line Services (Reference): 2
CD-ROMS: 3

Are there regulatory requirements/issues that would either aid or inhibit such networking?
No

Are there funding requirements/issues that would either aid or inhibit such networking?
Yes

Are there governance requirements/issues that would aid or inhibit such networking?
No

The current state of connectivity amongst libraries in your province/territory.

Define/Describe the existing networks that are in place in your province/territory that:

The Nova Scotia Provincial Library's integrated automated system, NcompasS, is a powerful multi-faceted system and network. It represents the culmination of careful research, a province-wide vision, cooperative planning, and a desire to position the Nova Scotia Regional Libraries at the leading edge of information technology.

The system was designed to provide end-users with enhanced access to all holdings of the Regional Libraries of Nova Scotia, improve the efficiency of Provincial Library's centralized acquisitions and cataloguing services and form the basis of a province-wide electronic network, providing e-mail and Internet throughout the regional library system. Once public access terminals are installed, public libraries will be able to offer limited Internet access to their patrons and provide connectivity with other provincial databases and bulletin boards. NcompasS is a gateway to the worldwide network of networks, the Internet, as well as to Novanet, the University libraries' database, the developing Chebucto and the Cape Breton Freenets. Soon there will also be links with museums, schools and community colleges. The Provincial Library is now producing the DISSEMINATOR, a bi-weekly electronic newsletter about recent activities, issues, and upcoming events. This newsletter is distributed via electronic mail to staff in the Regional Libraries, Department of Education personnel and other interested reader

The tri-lingual multiLIS library software was selected for its superior cataloguing functions and ability to network. Presently there are three databanks within NcompasS: the NSR bank of library holdings for the nine regional libraries for which Provincial Library catalogues materials, the Halifax City Regional Library, and the Dartmouth Regional Library holdings. The latter two libraries are using Dynix software, and export a tape of their holdings which is loaded on NcompasS. Together, the three banks form a virtual database that is practically transparent to the end-user. The interconnectivity of the three systems will be even greater when they become linked using the ANSI Z39.50 protocol. The Nova Scotia Museums and Education Media Services have been investigating the possibility of sharing the system. This would be of great benefit to end-users, who would have one-stop access to more information.

Eventually NcompasS will be a wide-reaching distributed network, with a central system housed at Provincial Library and individual automated library catalogues at the Regional Library level. Functions such as circulation and collection rotation will be controlled at the regional level, while seamless access is provided to all patrons province-wide. Provincial Library will maintain responsibility for the integrity of the database, and provide coordinated authority control. There is an automation plan in place to make funding available for the automation of all Regional Libraries in Nova Scotia. This will extend the benefits of NcompasS to over 85 service points throughout the province.

What major initiatives in technology-based resource sharing and network development are planned?

Department of Education WAN linking all public libraries and providing Internet

How many public library systems are connected to a Free-Net or Community Network?

Only 1 is operational right now but several regions have a home page on the Chebucto FreeNet

How many public libraries in your jurisdiction are connected to the Internet?

* For administrative purposes: 11 regional libraries * For service purposes: 11 regional libraries * For public access: 1 regional library

From where do they obtain this connectivity?

* Provincial Government_____X_____

* Freenet_____X_____

What are the major network connectivity issues you are facing now?

Funding: long distance rates Department of Education providing and funding access

hardware costs_____X_____

connectivity costs_____X_____

Training:_____X_____

Other: Censorship of certain news groups may be an issue as Dept. of Education brings more schools onto the internet.

Are there any current initiatives in your jurisdiction to provide universal access to the information highway?

Please describe: Dept. of Education WAN

What would it cost to provide connectivity to the public libraries in your province?

For the purpose of ILLO: $63,000 annually - non available

For direct patron access to Internet resources:___250,000_____

What role could the federal government play in developing a Canada-wide, library network infrastructure?

Policy development? Access principles and policies with incentives for Provincial Governments to provide public access.

Regulation? Telephone Companies and other suppliers to be required to fund a portion of the public access costs.

Grant programs? Particularly useful for getting started

Operational funding? This is the key area for sustainability of access. Often easier to obtain capital and installation funding.

Training programs? This is very important particularly if it could facilitate more cooperation between educational institutions and libraries.

What do you see as the major issues to be addressed and resolved if the public library infrastructure is to be used for public access to the information highway?

An acceptance that public access is a public right and a good thing for the country.
Encouragement for cooperation between public and private sector for the benefit of all citizens.

VII. ONTARIO

Basic Statistical Data:

Population of the Province/Territory:	9,698,639 (1994)
Population Served by Public Libraries:	9,690,230 (1994)
Percent of Population Served:	99.91%
Number of Individual Library Systems:	398 (1994)
Number of Permanent Locations:	850 (1994)
Number of Public Library Systems with:	
Automated Catalogues (OPACS):	200
Dial-In Access:	20
Automated Circulation Systems:	200

On-Line Services (Reference): 36

CD-ROMS: 302

Are the public libraries in your province/territory supportive of the concept of:

- **networking amongst themselves?**

Supportive **Not Supportive**

(1) (2) (3) (4) (5)

Note: Ontario public libraries are not only supportive of inter-library networking but are increasingly turning to other community partners to form inter-agency partnerships. See *Survey of Network Clusters in Ontario, 2nd Edition 1994*, produced by the Southern Ontario Library Service.

- **networking with libraries in other provinces and territories?**

Supportive **Not Supportive**

(1) **(2)** (3) (4) (5)

Note: For additional information on networking for all of question **#4**, please see the PTLDC submission to the Information Highway Advisory Council discussion paper, *Access, Affordability and Universal Service on the Information Highway submitted March 1995.*

Are there regulatory requirements/issues that would either aid or inhibit such networking?

Some libraries have issues around fees for interlibrary loans.

Are there funding requirements/issues that would either aid or inhibit such networking?

Federal funding to help offset costs of inter-provincial interlibrary resource sharing for net-lenders or communication/distribution costs for net lenders or borrowers, would address most issues. Partnership funding is required to support the development of provincial and regional network development including network management and planning; network hardware and software; public access stations; training for information workers and users and content development.

Are there governance requirements/issues that would aid or inhibit such networking?

Governance issue of library boards being replaced by Committees of Council could impact negatively on networking.

In Ontario the region of Halton Hills (Halinet) has just negotiated their first contract with a service vendor between the public libraries, boards of education and the community college. They have noted that one of the most difficult aspects of this initiative was the coordination among the players. This is another type of issue of governance which could prevent more imaginative partnerships from coming to fruition.

The current state of connectivity amongst libraries in your province/territory.

35 regional automation/resource-sharing networks;
local resource-sharing partnerships;
province-wide library support for a provincial information grid, Network 2000.

Define/Describe the existing networks that are in place in your province/territory that: (Please note that I have the PTLDC Survey and updates from NS and Sask., so you may want to build on those reports)

* **connect public libraries**
  35 regional cooperative automation and resource sharing networks;
  Province-wide INFO database;
  OPLIN;
  TRESNET

* **connect public and academic (university/college) libraries**
  HALINET (Halton Hills, Milton, Oakville, Burlington);
  Thunder Bay;
  Sudbury;
  Hearst;
  Ottawa-Carleton area to Carleton University;
  Windsor;
  Niagara Region;
  Lindsay;
  Peterborough

* **connect public and school libraries**
  Peterborough;
  Cochrane-Timiskaming;
  Brampton;
  Windsor;
  Ottawa;
  Cornwall

* **connect public libraries to the National Library of Canada**
  See National Library Submission

* **connect public libraries to other information providers (e.g. community information centres)**
  Following are a few examples :
  - HALINET (Halton Hills, Milton, Oakville, Burlington);
  - Collingwood
  - St. Thomas, public access centre in conjunction with CEIC
  - Public Libraries of Prince Edward County (Industry Canada Public Access Pilot project)
  - Toronto Public Library provide access to the Metro Toronto Community Information Centre Data base from every public access terminal
  - Richmond Hill provides access to community information centre files as well as CEIC employment information
  - 310 public libraries providing electronic access to the Electronic Registry
  - 200 public libraries providing electronic access to the Government of Ontario Information Service
  - Mississagua and Nepean Public Libraries pilot projects for Clearing the Path.
  - York Public Libraries (Aurora, Markham, Richmond Hill, Vaughan and Newmarket) members of the Intercom Canada trial.

What major initiatives in technology-based resource sharing and network development are planned?

The major initiative in Ontario is the Information Network for Ontario (INFO). The purpose of INFO is to produce a provincial database of the holdings of automated public libraries in Ontario (170 in 1994), and to facilitate access to materials province-wide. This has been a collaborative effort between the branch, the OLS, and Metropolitan Toronto Reference Library and was first completed in CD-ROM format in the fall of 1993 (7 CD-ROMs and 6 million records). Phase two (spring 1995) is the introduction of interlibrary loan software (AVISO) and telecommunications software.

Network 2000: The branch is also working with the OLS, the MTRL, the Archives of Ontario, the Association of Community Information Centres of Ontario and the Ontario Public Library Strategic Directions Council on a major strategy to develop and implement equitable public access to electronic information on a province-wide basis. *Network 2000* provides the information infrastructure needed by Ontarians to access electronically available education, training and economic job creation, government and other information needed in a restructuring economy. The proposal going forward to the Ontario Network Infrastructure Program Council (ONIP) is a seven point, three year strategy:

1) the adoption of universal access principles;
2) the development of a broadband, highspeed, interoperable telecommunications network infrastructure for community information providers throughout the province;
3) the provision of widespread public access to the Internet and the global information infrastructure through public libraries and other community information providers, for all Ontarians, including those people who currently cannot access electronic information resources through the school, workplace or from home.;
4) assurance of access to the system for members of designated equity groups and also including the elderly and shut-ins as well as the creation of content relevant to these groups; 5) the coordination of public access network partnerships;
6) the creation of digitized government and community content throughout Ontario communities to provide data resources for the global information infrastructure;
7) the development of information training support for all public information workers and Ontarians who have not received such training in the workplace or at school, college, university or other educational training centres.

NOTE: as of March 10, this project is in the proposal stages only.

The Ministry also provided automation funding to enable non-automated libraries to create local and regional databases which can be added to the next editions of the provincial catalogue.

Networking and electronic clusters

A major strategy for the development of the Provincial Information Grid is the "network of networks" configuration. This involves provincial funding support for the development of local and regional networks throughout the province. There are approximately 20 of these local and regional electronic networks to which public libraries are contributing, either as the lead or as a major partner.

How many public library systems are connected to a Free-Net or Community Network?

15 have Free-Net Public Access Terminals.
6 have OPACS accessible via Free-Nets.

How many public libraries in your jurisdiction are connected to the Internet?

* **for administration purposes:**	35
* **for service purposes:**	NA
* **for public access**	15

From where do they obtain this connectivity?

* Provincial Government	ü
* Free-Net	ü
* University	ü
* Commercial Service	ü

Note: Within six months, most public libraries in Ontario will have administrative internet access related to the INFO/AVISO telecommunications system for interlibrary loan. This will be provided by the Ontario Library Service outside of metropolitan Toronto and by the Metro Toronto Reference Library in Metro Toronto.

What are the major network connectivity issues you are facing now?

Funding: **Long Distance Rates:** #1 Issue

Hardware Costs: Lack of local / municipal funding is a major concern for public libraries. Libraries and Community Information Branch is investigating provincial funding sources including the Ontano Network Infrastructure Program, and funding that may become available as a result of the Ministry of Education and Training's response to the recent Ontario Royal Commission on Learning.

Connectivity Costs: #2 Issue

Training: Public library training on the Internet/Information Highway access is needed both for staff and the public

Content: Major attention needs to be paid to the development of local,regional and provincial content in digitized form. This is a key strategy to support Canadian content on the Information Highway.

Copyright: Copyright Act issues on electronically-available information have yet to be resolved.

Licensing Issues: There is a need to obtain low cost provincial software and CD- ROM licensing rights for public libraries.

An opportunity is available to investigate joint licensing with school library partners through the services of the Ministry of Education and Training.

Are there any current initiatives in your jurisdiction to provide universal access to the information highway?

Please describe:
The Information Network for Ontario (INFO) is a project of the Libraries and Community Information Branch, the Ontario Library Services, the Metropolitan Toronto Reference Library and public libraries of Ontario. Through INFO, 398 library systems will be able to participate in a network whose initial focus is on resource sharing of collection materials. INFO will be expanded to provide libraries with access to the global network of information resources.

INFO consists of three components - a database with the collection records of 170 library databases, on 7 CD-ROM discs representing 4.7 million titles; AVISO interlibrary loan software, working in conjunction with telecommunication software to enable transmission of information between libraries; and a Postmaster on a UNIX box at the Ontario Library Service agencies and the Metropolitan Toronto Reference Library, which stores and forwards messages between libraries and gathers statistics on resource-sharing.

Network 2000 is an initiative in response to the Ontario public library community's need for equitable, province-wide access to information. It builds on INFO to provide public access to global electronic information available on the provincial information infrastructure. Libraries will be public access points to the Internet. Network 2000 is a modular strategy to develop and implement public access to global, multimedia electronic information. It builds on existing provincial and municipal infrastructure, including INFO. The heart of Network 2000 strategy is a broadband telecommunication network that provides high speed multi-media data transmission between libraries and from external databases. This component forms the basis of a coordinated, multi-partner application to the Ontario Network Infrastructure Program (ONIP). Other key components of the ONIP application and Network 2000 strategy include training for public information workers including librarians and library workers, and public training, as well as funding for local, regional and provincial databases (content creation) to be available to the public on the provincial information infrastructure.

What would it cost to provide connectivity to the public libraries in the province:

For the purpose of ILLO:	$600,000
For ILLO and Reference:	-
For ILLO, Reference, and Administration:	-

For direct patron access to Internet resources: 2.3 Million as an absolute minimum for text-based (non-multi-media) access to the Internet, (to cover costs of computers and connectivity costs for one year only

To secure optimal public access from the provincial information infrastructure to globally available, multimedia information, Network 2000 calls for an investment over four years of $27.95 million in the technology infrastructure, $887,000 for network management administration expenditures, $3.3 million for network access, $3.6 million for training, and $18.8 million for local, regional and provincial database content creation.

To what extent has this funding been promised, secured, allocated?

Provincial Library Project Grants (LPG) funding of $790,000 is anticipated for 1995/96, (pending 1995/96 budget announcements). $500,000 of this could be anticipated to be devoted to public library connectivity, and $200,000 to library automation. Remaining funding necessary for public access to global multimedia information resources is being sought as part of the Network 2000 application to ONIP. See #6 and #6.1, above.

Which elements are being funded, and what more do you need?

$790,000 LPG funding is anticipated. This will only cover costs for gradual implementation of multimedia workstations for public access to INFO or the provincial information infrastructure, and does not address the need for a broadband width network capable of transmitting multimedia information resources.

What role could the federal government play in developing a Canada-wide, library network infrastructure?

Enhanced role for the National Library?
The National Library could develop a union database of all library holdings across Canada, and provide funding to help in the development of provincial information networks.

Policy Development?
The federal government, including the Information Highway Advisory Council, could take a strong, proactive lead in developing copyright policies for the information age, to help facilitate universal public access to information.

Legislation?
The federal government could consult over, and develop an Electronic Public Libraries Act to guarantee universal, equitable public access to electronic information.

Tax Policies?
Tax on library acquisitions (esp. GST) could be reduced or eliminated, including on software, databases and other content made publicly-available on the information highway.

Grant Programs?
Project grant programs targeted for equity groups and public access, and flexible to changing community and economic need, are needed. In addition to targeting rural communities and First Nations, federal grant programs for information highway access can be expanded to include urban areas, where 95% of Canada's population live. Initial funding targets in urban areas can include areas of high unemployment.

Operational Funding?
An infusion of federal government operational funding could help offset inter-provincial resource-sharing costs.

Training Programs?
The federal government could provide funding for training to develop content creation database development skills, and Information Highway access skills, in persons training or retraining to enter the workforce. Federal funding could also be made available for the predominantly female library, community archive and community information centre workforce, to help them to upgrade their skills so that they can access globally available electronic information. Federal funding could be further extended to help train the public to access globally available electronic information.

Procurement?
The federal government could initiate Canada-wide licensing of shared software and information technology resources for libraries. The federal government could step up its efforts to redeploy surplus upgraded equipment to help libraries provide public access to the Internet.

Pilot Studies?
The federal government could help fund information technology implementation, virtual library, information highway awareness programs, and information highway access marketing pilot projects.

What do you see as the major issues to be addressed and resolved if the public library infrastructure is to be used for public access to the information highway?

Major opportunities include free public access to multi-media capacity broad band width to provide optimal public access to electronic, multi-media information and the formation of multi-media partnerships including with the private sector.

Issues to be addressed are potential restrictive copyright legislation, limited government funding, and the need to ensure public bandwidth is not restricted by private sector demands. There is a development of dangerous trends towards a withdrawal of information from the public sphere, to make it available for businesses to sell to the consumer.

Network development initiatives

Internet access
Internet access for Ontario public libraries and for public access is a Ministry (LCIB and OLS) strategy. The branch through the Ministry's information technology branch provided 30 Internet i.d.'s to all of the Greater Toronto Area libraries. The two Ministry agencies and the MTRL for the Metro area libraries have been allocated Internet accounts for all the public libraries in their geographic areas for the resource sharing. Running parallel to phase two of INFO are plans to introduce services to all the libraries and community information centres of Ontario. This will be a collaborative effort between LCIB the OLS, Metro Toronto Reference Library as well as provincial and federal information infrastructure funding programs.

Internet based information sharing systems
The Branch assisted in the development of a multi-media based database which was successfully installed on Internet and accessed remotely. This project was undertaken to demonstrate the parameters existing for full access to digital libraries in all formats.

E-mail and electronic conferencing:
The branch is connected to a Ministry wide e-mail system and uses Internet for e-mail to many external clients both in Ontario and elsewhere. The branch is fully connected to the government's voice mail system. In addition, LCIB is connected to the Electronic Post Office (EPO), a government-wide e-mail system.

The branch is present on the Toronto FreeNet and is planning to mount a Home Page on the WWW within the next few months.

Electronic publishing
The branch's focus in this area includes the following:

- the production of a provincial database in CD-ROM format (with OLS agencies & MTRL);
- the provincial library statistics in machine readable format;
- the development of a multi-media database of archival holdings in a rural public library in Ontario (Lindsay).

Interministerial Partnerships in Technology Development

Environmental Bill of Rights (EBR) Registry - Ministry of Energy and the Environment (MOEE)
Over the last year, the branch worked closely with MOEE, the OLS and MTRL in a new partnership to make public libraries the electronic doorway to the Environmental Registry. This is a provincial government electronic bulletin board which is part of the province's EBR. MOEE provided more than $400,000 for training, equipment, marketing, project staffing, and a First Nations access strategy. By the fall of 1994 it was available in more than 310 public libraries.

Clearing the Path
Clearing the Path is a new initiative designed to use information technology to make it easier for business to work with government. It has four components: a master business license service which simplifies business registrations, renewals and cancellations (self-help stations would be installed in community outlets including public libraries to assist businesses with the registration processes); a unified reporting service which would link tax filing, remittances for registration and fees and assessment processes to a single business; BusiNet, a province-wide bulletin board containing information on government programs and services, procurement, research and development, and investment opportunities; and the sale of tradable government databases. A pilot to locate terminals in public libraries in underway in the Mississauga and Nepean public libraries.

Multi-Use Facilities - Ministry of Education and Training (MET)
Community-based Multi-use school facilities funding is for shared local community facilities that include a school component. Announced projects include schools in facilities that have included community libraries as well as child care centres, recreation facilities and career planning centres. Funding has recently been flowed to Etobicoke Public Library, a partner in a $6.1 million dollar Humberwood Community Centre. In addition to the library, this project involves school and recreational facilities.

Government of Ontario Information
The Environmental Registry is the first information product on the provincial government's electronic bulletin board. The next product is the *Government of Ontario Information* service, an electronic guide to programs and services of the provincial government. This is another way for libraries to become the "One Place to Look" in their communities and to demonstrate how libraries are becoming electronic doorways to information. The service is now available to the public in over 200 public libraries.

Intercom Ontario
A pre-competitive trial of a city of the future. This is a community of affordable homes in Newmarket, Ontario connected by a broadband network to universities, public schools, business, government and other information providers. The York Public Library network (Richmond Hill, Newmarket, Vaughan, Markham & Aurora) are participating as trial members with the assistance of LCIB.

Other
The LCIB works with other organizations including Federal government departments and private sector industries in the areas of telecom planning and development. We are currently partnering with Industry Canada in the SchoolNet Community Access program as well as the Computers in Libraries Program.

VIII. PRINCE EDWARD ISLAND

Development of widely based Internet access through PEINet for the whole of the library system. Discussions on-going with University of Prince Edward Island and other partners regarding multi-type network development.

IX. QUEBEC

The "Direction des arts, des lettres et des bibliothèques" does not manage the libraries nor does it offer them any direct technical services.

Financial assistance makes possible the computerization of the regional public libraries services centres. A number of affiliated libraries now have access to the catalogue of the regional centres. A data transfer centre enables the regional centres to take advantage of centralized technical services.

Services documentaires multimédia inc. (S.D.M.), a multi-media documentary services firm, offers technical services (bibliographical data) that are intended to meet the needs of the library network users.

X. SASKATCHEWAN

Basic Statistical Data

Population of Province:	988,928 (1991 census)
Population Serviced by Public Libraries:	956,578 (1992)
Percent of Population Served:	16.7%
Number of Individual Library Systems:	10
Number of Permanent Locations:	314 (1992)

Number of Public Library Systems with:

Automated Catalogues (OPACS) 6

- Palliser (Moose Jaw Public), Saskatoon Public Library, Regina Public Library, Southeast (Weyburn and Estevan Public Libraries), & Wapiti (Prince Albert Public Library)

- The following libraries plan to offer an OPAC to the public by the fall of 1995: Chinook (Swift Current Branch), Lakeland (North Battleford Branch)

Dial-In Access: 3

- Regina and Saskatoon Public Libraries and Southeast Regional Library currently have dial-in access.
- The following library systems plan to provide dial-in access by the fall of 1995: Chinook Regional Library, Palliser Regional Library, Lakeland Library Region, Wapiti Regional Library.

Automated Circulation Systems: 3

- There are automated circulation systems currently in operation in the following libraries: Saskatoon Public Library (all 7 branches and 1 bookmobile), Palliser (Moose Jaw, regional headquarters), Southeast (Weyburn, Estevan, regional headquarters, bookmobile), Wapiti (Prince Albert Branch).

On-Line Services (Reference):

- Saskatoon and Regina Public Libraries offer a traditional on-line reference service.
- Southeast Regional Library offers access to a set of 5 text-based CD-ROMs or local databases through their network. Southeast does not offer any interactive or messaging reference service online.

Saskatchewan public libraries are supportive of both the concept of networking amongst themselves and networking with libraries in other provinces and territories.

The Saskatchewan Public Libraries Act/Regulations require participation in the Saskatchewan Union Catalogue, interlibrary Loans, and reciprocal borrowing in order to be eligible for provincial government grants.

Are there funding requirements/issues that would either aid or inhibit such networking?

Saskatchewan public libraries are very hopeful that the federal government will approve an infrastructure grant for libraries. That infrastructure grant is essential to generate the matching local revenues to extend the network past the cities that have regional library headquarters and to support the development of a multitype information system.

Are there governance requirements/issues that would aid or inhibit such networking?

We have been so focused on developing the Saskatchewan network and resolving provincial issues that we have not contemplated national governance/issues.

The current state of connectivity amongst libraries in your province.

5.1 Describe the existing networks in your province.

The existing networks that are in place in Saskatchewan are:

connect public libraries - plan to have connections from all regional library headquarters to Provincial Library by March 31, 1995.

connect public and academic (university/college) Libraries - plan to have all public libraries in cities on Internet by the fall of 1995. connections to smaller centres are part of the next phase of development.

connect public libraries to the National library of Canada - through Internet, see above.

connect public libraries with schools - As of March 2, 1995 Saskatchewan public libraries are looking at negotiating sharing the pipelines with Saskatchewan Education, Training and Employment but no details of the possible arrangement are available at this time.

What major initiatives in technology-based resource sharing and network development are planned?
See attachments: Sasktel Brief and the outline of Saskatchewan's Province-wide Library Electronic Information System.

How many public library systems are connected to a Free-net or Community Network?
As of March 2, 1995 only 2 libraries, Regina Public Library and Saskatoon Public Library (and all their branches) are connected to a Free-net.

How many public libraries in your jurisdiction are connected to the Internet?

As of March 2, 1995 the public libraries connected to the Internet are the Regina Public Library and the Saskatoon Public Library. At this date those libraries obtain connectivity from Sasknet (i.e. through the universities). However the responsibility for Sasknet is moving from the universities to Sasktel in the very near future. As the Province-wide Library Electronic Information System outline indicates, in the near future libraries will obtain their connectivity through the provincial government/Sasktel.

It should be noted that, although the Provincial Library is not a public access library, it does have currently have an Internet connection.

Major connectivity issues

Funding:

Long distance rates: Yes, long distance rates are the most significant issue because they represent an on-going cost.

Hardware costs: Hardware costs are a concern, but of lesser concern than long distance rates because libraries can obtain do local fund-raising or obtain local funding for one-time capital items.

Connectivity costs: The second most important issue is connectivity costs because they are expensive and on-going.

Training is an issue especially for rural branch librarians. However, there are existing structures for training staff.

Licensing is a major issue because of extremely high cost per site for very small populations.

Other concerns: include network support. There is a lack of expert network resource people to build networks.

Current initiatives in Saskatchewan to provide universal access to the information highway:

See the attached item on the Province-wide Library Electronic Information System.

Cost to provide connectivity: Saskatchewan public libraries are in the midst of negotiations with Sasktel and are unable to answer these questions at this time.

To what extent has funding been promised, secured, allocated?
Provincial Library will be purchasing the electronic connection from Sasktel for the ten public library systems. This will create the communications backbone among these sites as well as provide limited Internet access.

The library systems will be fiscally responsible for establishing connectivity amongst other types of libraries in their communities and to all branch libraries within their region. However, the Provincial Library will be distributing small, one-time grants of approximately $2000 to the ten public library systems to defray some of the costs of expanding connectivity to other types of libraries in their communities.

Which elements are being funded, and what more do you need?

In addition to the above, the library systems are hopeful for a federal infrastructure grant which would also be used to defray one-time costs. The infrastructure grant of $500,000 will be used to match local funds in the implementation of phase 3, to extend the network to rural Saskatchewan and the north.

It is worthwhile noting that the library systems are very concerned about their on-going fiscal responsibilities as they have not received an increase in provincial government grants for several years.

What role could the federal government play in developing a Canada-wide, library network infrastructure?

A summary of responses from Saskatchewan public libraries:

Enhanced role for the National Library?
- The role of National Library should be enhanced only if it is determined that this is the best way to go.
- Is the National Library may be a risky place to place responsibility since it is too easily affected by political whims;

Policy development?
- There are none - develop some;
- National policy development should be happening;
- Library staff and other information professional should be involved in policy development.

Regulation?
- Regulation of pornography on the Internet would be desirable but is it possible?
- Only in terms of legislation;
- The most important regulatory role would be to get it started and step back - ongoing regulation should be minimal.

Legislation?
- I do not understand how the federal government could develop legislation for libraries since they are not traditionally under federal jurisdiction.
- May be the best way to ensure participation and quality of service.
- There is a need for legislation which absolves libraries of legal liability for providing access to inaccurate information on the information highway.

Grant Programs?
- Grants are essential - the infrastructure likely could not be set up without them.
- Federal government could provide grant programs to library networks (provincially) to aid libraries in accessing the Internet.

Operational Funding?
- None.
- The federal government should support the development of the infrastructure but not be responsible for maintenance.

Training Programs?
- The federal government could assist training by providing grants or other funding to the Canadian Library Association or National Library but it would be necessary to ensure that the training is offered in small centres and not just in major cities.
- Could be set up through grant programs but not necessarily run by government agencies.

Procurement?
- Believe that this is the main role of the federal government.
- Libraries individual equipment needs are so diverse that any cost savings in a bulk arrangement would be minimal.
- There may be a place for central purchasing to reduce costs of the equipment and standardize the equipment in use initially.

Pilot studies?
- Federally supported pilot studies at several types and sizes of libraries would be useful in providing information for others working toward Internet access.
- A pilot project should focus on the unique circumstances and needs of rural/north.
- There are many possibilities to explore.

Others?
- This is the most important project for the development of Canada and the Canadian people. This should be top priority for the Government of Canada in order to be a leading nation in the world. We need this to be competitive in the world information markets.

What do you see as the major issues to be addressed and resolved if the public library infrastructure is to be sued for public access to the information highway?

A summary of responses from Saskatchewan public libraries:

- Costs to libraries including equipment, staffing, connection costs, online costs;
- Adequate staffing levels to utilize the information highway and to assist patrons in its use;
- On-going operational costs;
- Capital funding;
- Training for staff, especially in small rural libraries, and training for the public;
- Public concerns about the need to limit access to pornography on the information highway;
- Legal liability for providing access to the content of information on the information highway (especially if it was wrong);
- Information policy issues e.g. censorship, fee/free access, legal liability;
- Who pays for what?
- Will demand be high enough to justify doing it at all?
- Security on the networks.

XI. Yukon

Public Library Services(PLS) currently uses SLQ's LaserQuest system for cataloguing and LaserGuide for the production of a public access CD-ROM catalogue; copies of the catalogue are available in Whitehorse and in nine communities, and include the entire Libraries & Archives imprint and catalogued collection. PLS will be switching to The Library Corporation's BiblioFile system for these products in coming months. PLS is currently implementing BiblioFile circulation and acquisitions modules and are expecting the circulation system to be up later this year. A number of libraries in the Yukon, including territorial government departments and Yukon College, have standardized on The Library Corporation's products to enhance resource sharing; future considerations include shared cataloguing and the production of a union CD for all Yukon library holdings.

PCs and terminals in Public Library Services and Whitehorse Public Library will be linked through a Novell NetWare LAN; this will also provide access to e-mail and Internet and services of YTG Information Systems Branch through the YTG mainframe.

Internet access is being planned through the YukonNet Operating Society, a local non-profit organization which will be the regional service provider for Yukon. Services are scheduled to be available after September, once NWTel has a digital line (56k) operational, and ca*net has a router in place. Plans for library connections initially include full staff access and limited public access in Whitehorse; expansion to the rest of the Yukon is being considered as a later phase.

The Yukon is considering a proposal for joint partnership with NWel in the provision of a public videoconferencing facility in Whitehorse Public Library as a pilot project; the first use of the facility will be by Queen's University for their national Executive MBA program which is being delivered across the country via video conferencing technology.

The Yukon is looking at providing public access to computer facilities, for use of CD-ROM and other databases, for word processing and communications; plans are for PC and MAC-based systems for use by adults and youths.

In all these initiatives, the LPS is working closely with YTG's Information Systems Branch (formerly Systems & Computing Services), Yukon Net Operating Society, of which we are a corporate member, and other Yukon libraries, chiefly through Information Providers, our professional association.

XII. North West Territories

NWT Library Services adopted multiLIS as its library automation system in 1988. Currently around 100,000 records from NWT Library Services, Yellowknife City Library, NWT Legislative Assembly Library and Keewatin Board of Education are in the online system which consists of Acquisition, Cataloguing, Circulation, Rotation, OPAC, Report Generator modules with satellite communications supported by NWT Government Services. In 1993, NWT Library Services installed IBM RS6000 minicomputer with upgraded version of multiLIS 10.8. Due to the cost and complexity of communications in the north, in 1991 NWT Library Services developed its
CD-ROM based Union Catalogue to share information with all remote communities. The placement of the NWTLS CD-ROM Union Catalogue in all public libraries in the Territories in mid 1992 resulted in a big increase in interlibrary loans. The 100,000 record database will also be placed in the National Union Catalogue at National Library's request.

Currently a major project is undergoing to setup a CD-ROM Reference Tools LAN with remote dial-in access. This LAN will be connected to UNIX based multiLIS online system. NWT Library Services is working closely with Radio & Television and Distance Learning towards a major information service centre of the Department. Internet connection to this system will be considered in the near future.

Appendix "B": National Library of Canada's response to the CPI questionnaire

Existing Networks That Connect Public Libraries to the National Library of Canada.

While there are no dedicated networks which link public libraries to the National Library, public libraries do use the Internet and Datapac to access National Library information and services. A variety of services are available using these networks, including:

DOBIS Search Service: Over 680 registered organizations are using the National Library's DOBIS database via Datapac or the Internet to locate items for end users, to obtain cataloguing copy, or to verify bibliographic information. In the near future, libraries will be able to access AMICUS, the National Library's new system.

Interlibrary Loans / Locations: Over 600 loan/location requests are received by the National Library's Interlibrary Loan Service on a daily basis, chiefly by electronic mail. Both Envoy 100 and Internet e-mail are accepted.

Reference & Information Requests: Requests are accepted via electronic mail (Internet or Envoy 100), telephone, fax, and electronic mail. This service is available to supplement the reference resources of public libraries, public library systems, and provincial library services, and to provide more information on NLC programs and services such as the Canadian Book Exchange Centre.

In addition to the above, libraries can access the National Library's gopher server via the Internet for information on NLC products and services, and as a 'gateway' to other federal government information sites.

5.2. Major Initiatives In Technology-Based Resource Sharing and Network Development (Planned).

The National Library has a number of major initiatives which are either in progress or planned:

AMICUS, the National Library's new, state of the art, bibliographic information system is in development and testing. Once this system is available, libraries and individual users will be able to check the National Library's online public access catalogue (OPAC) at no charge. There will be a fee-based version of the complete NLC data base, including access to the National Union Catalogue.

Z39.50 /Search and Retrieve: An ongoing initiative relates to promoting and evaluating the implementation and use of Z39.50.

NLC World Wide Web (WWW) Homepage, NLC Gopher: The NLC Gopher will continue to be available and is being added to. An NLC WWW server is being developed, and will be made available before long.

Other initiatives include enhancements to **PEB/ILL,** NLC's interlibrary loan system, and the **Electronic Publications Pilot Project**, which, among other things, will make a number of Canadian electronic periodicals available via the NLC Gopher.

7. Roles Which the Federal Government Could Play in Developing a Canada-Wide, Library Network Infrastructure.

7.a. Enhanced Role for the National Library

The National Library provides information services to a national and international clientele from a single location. To undertake the efficient provision of these services, the National Library continues to make extensive use of technology. Since 1984, the National Library has provided national online access to a database of standard catalogue records of the National Library collection and the collections of many Canadian libraries. The National Library is currently working in partnership with the private sector in the development of AMICUS, our flagship next generation system. Agreements with other federal institutions will allow them to use results of AMICUS development. Internet access is provided to staff throughout the National Library.

Depository Services Program: Libraries across the country are used as dissemination centres for government information through the Depository Services Program. It is expected that libraries participating in this program will continue to play an important role in public access to government information, particularly in assisting the public to navigate the electronic information environment. The National Library, in its role as guardian of all government published information, will be an access node to high-demand government publications, both print and online, through its interlending service, its on-site consultation facilities and its online information servers (AMICUS, Gopher, WWW). A comprehensive directory of both print and electronic government information will be needed to ensure access for all Canadians. Given the National Library's collections, expertise, and state-of-the-art AMICUS bibliographic system, NLC is the most logical federal government institution to exercise overall responsibility for the creation and maintenance of this directory. This registry of government information would make use of the AMICUS union catalogue which includes bibliographic descriptions and locations of current and retrospective government publications; uniform resource locators and registration numbers, which will be added to the directory for access to government electronic publications; Infosource, which contains information about the Government of Canada, its organization and its information holdings; National Archives information holdings which can be made accessible through AMICUS, and departmental inventories and catalogues.

Registering Canadian Information on the Internet: The National Library can continue to encourage the development of mechanisms which inform the public as to what information is available on the Information Highway. Using the capabilities of AMICUS in support of the National Union Catalogue, the National Library could provide a mechanism for registry of Canadian information located on the Internet. This might be achieved in a variety of ways; one potential approach would be for libraries to catalogue Internet resources using AMICUS, including the universal resource locators (URLs) to permit direct access from AMICUS to the information. The National Library can also continue to provide Internet services such as its Gopher, which points to other federal government and library Internet resources.

Equalizing Role: The National Library, through its existing services, plays an equalizing role at the national level, helping to ensure that all parts of the country have access to key library services such interlibrary loans, reference assistance, and book exchange services. In keeping with this equalizing role, consideration should be given to funding the National Library to allow it to provide grants and contributions to public libraries in order to assist them in becoming successful on-ramps to the Information Highway.

Standards: In a dynamic and changing environment, it is difficult to have universal standards. Rather there are numerous international, national, proprietary and de facto standards that continue to evolve. Nonetheless, it has long been recognized in the library community that sharing resources requires national bibliographic and technical standards for communicating and exchanging information. The National Library continues to develop and promote the use of national and international standards, including CAN/MARC (Canadian Machine Readable Cataloguing), the ISO Interlibrary Loan Protocol, and the Z39.50 standard, which allow libraries to exchange information, interconnect and share resources. An expanded role in this area is not proposed, but a sustained effort is.

Canadian Content: The National Library has a support and enabling role in fostering Canadian content, national collections, and digitization. The National Library, through its close relationships with other federal cultural institutions, and other major libraries, could enter into an expanded range of partnerships to make more of the Canadian cultural heritage available to all Canadians through the Information Highway. These partnerships would contribute a great deal to a healthy, vibrant Canadian Information Highway. It should be noted that an expanded role would be most successful with additional funding.

Other: The National Library is interested in pilot studies and projects which would support more Canadians having access to information and library services at a lower cost. Given the current climate of fiscal reductions, this would particularly be of interest if the projects were likely to result in reduced costs to the National Library. The National Library is prepared to continue to broker partnerships whenever it can, and to provide a strong advocacy role for libraries.

7.b. Policy Development

Canadian citizens must be effective users of knowledge resources. As the largest publisher in Canada, the federal government can accelerate the learning process among citizens by making its information resources readily available via the Information Highway. Therefore, the federal government should develop and adopt policies to ensure that network access to all Canadian government tax-supported electronic information will be available to all citizens through their public libraries and other appropriate community information centres at no or minimal charge. An operating assumption would be that all such basic government information be accessible for public use, except when issues of privacy or national security are involved.

Public policy also is needed to define universal access and affordable services. These services should be available either free or at a reduced cost but until they are defined the issue of cost cannot be resolved. Telecommunications charges should not be distance sensitive and some form of public funding or cross-subsidization of services will be required. Special funding may also be required to meet the special needs of disabled persons. Specific policies could also be adopted by the Government to encourage producers of hardware and software to adopt universal design strategies, so that all Canadians, regardless of physical abilities, will be able to use their products to access the Information Highway.

Responsibilities for preserving government and Canadian information need to be clarified. Both the National Library of Canada and the National Archives already have responsibilities for government information, one for published materials, and the other for records and unpublished materials. With the trend of more and more government information being produced in electronic form, the lines between published and unpublished are becoming increasingly blurred. There is a danger that valuable information may "slip between the cracks" unless roles and responsibilities are re-examined.

7.c. Regulation

The federal government must create a policy, regulatory, and legislative environment that will foster the development of an information infrastructure and the use of information as an economic force. In its Red Book, the Liberal government stated that it would "create a climate that encourages pre-competitive research in various parts of the Canadian economy". From the library point of view, regulations must be established that:

- reallocate funding and mandates libraries to expand their role as society's information providers into the electronic environment;

- require the private sector to expand network connectivity to all offices, schools, libraries and homes, and ensure that it meets current and reasonable future bandwidth demands.

Regulations should be enacted to ensure that basic telephone service remains both ubiquitous and affordable, while a new set of basic services that includes electronic mail communications must be developed to provide access to the Information Highway. In addition, publicly supported educational institutions such as libraries and schools should have access to the Information Highway for a reduced rate, or that adequate bandwidth is allocated to not-for-profit institutions such as libraries. Regulation must also promote end-to-end digital service for basic telecom service and the development of the most effective and affordable high-speed networking to the user.

7.d. Legislation

Canada already has some legislation in place to "control" the information on the Highway, and in some instances, access to that information. These laws include copyright, access to information, privacy, and portions of the criminal code. The Government needs to revisit these laws, and where necessary, adapt them to the context of the Information Highway.

Copyright law needs to be reviewed to ensure that it does not create barriers to information, while at the same time affording appropriate protection for creators. Copyright issues must be resolved in such a way that the protection afforded to creators is balanced by the need and legitimate rights of citizens to use information, that is, to permit a flexible use of information by researchers, students, and the general public. Specifically, the Government must move to Phase II of the reform of Canadian copyright law, which deals with users' rights immediately. Reforms to copyright law should also consider the international context of the Information Highway, and the fact that information flows over borders freely.

7.f. Grant Programs

Consideration should be given by the Government to continuing the funding for the National Strategy for the Integration of Persons with Disabilities, especially to ensure that all Canadians will be able to use the Information Highway without encountering barriers.

7.j. Pilot Studies

The National Library would encourage and consider seriously participation in pilot projects and software developments which would facilitate and encourage the widespread and effective use of the Information Highway, and in particular, pilot projects which would improve library and information services to Canadians.

Appendix "C"

A STUDY TO EXAMINE PUBLIC LIBRARIES AND COMMUNITY INFORMATION CENTRES AS PUBLIC ACCESS POINTS TO THE INFORMATION HIGHWAY

PREPARED BY: Stan Skrzeszewski, Maureen Cubberley, Barbara Clubb
of THE COALITION FOR PUBLIC INFORMATION

DATE: January 19, 1995

CONTENTS:

1. INTRODUCTION
2. BACKGROUND ON THE COALITION FOR PUBLIC INFORMATION
3. PROJECT PURPOSE AND OBJECTIVES
4. PROPOSED OUTLINE FOR THE PROJECT REPORT
5. METHODOLOGY, SCOPE AND PLAN
6. THE TEAM
7. PROJECT SCHEDULE
8. COSTING SUMMARY

1. INTRODUCTION

The Coalition for Public Information has undertaken to conduct a study which determines the current state of library and information centre networking in Canada and to determine the costs involved in providing a complete networked library and information centre infrastructure in Canada. This study is being conducted for Industry Canada which is providing the funding for this project.

2. BACKGROUND ON THE COALITION FOR PUBLIC INFORMATION

2.1 What is the Coalition for Public Information?

The Coalition for Public Information (CPI) is a national coalition of organizations, public interest groups, and individuals whose purpose is to foster broad access to affordable, useable information and communication services and technology. CPI provides an effective grassroots voice for equitable and affordable access to the benefits of telecomputing technology in the Information Age.

The Coalition for Public Information (CPI) was formed in November of 1993 in order to ensure that the developing information infrastructure in Canada, the so-called "Information Highway", serves the public interest, focuses on human communication, and provides universal access to information.

CPI's membership includes over three hundred individuals, organizations and public interest groups. It has attracted the attention of members of the general public, educators, information providers, publishers, networkers, communications and information specialists, as well as librarians and other information navigators from all types of institutions.

2.2 Who established the Coalition for Public Information?

Over the past few years, the Ontario Library Association(OLA) has been in the forefront of information policy and strategy developments in Ontario. In November 1993, the OLA held an International Forum on the transformational effect of the Internet. A resolution from the Forum to form the Coalition for Public Information was approved unanimously at the OLA Annual Meeting.

2.3 What does the Coalition for Public Information Do?

- CPI defines issues and develops public positions that promote the principles of universal access, pluralism of expression, the right to privacy, and intellectual freedom.
- CPI promotes the development of Canadian content on the global information highway.
- CPI monitors and makes available information on legislation, government policy and other initiatives related to the development of the information highway.
- CPI develops public awareness and education programs about technology and telecommunications services.
- CPI brings its program and goals to regulatory officials and legislators in order to ensure the affordability and accessibility of telecomputing and communications technology.
- CPI encourages the development of change strategies and readiness in "access institutions", such as libraries and schools, to ensure public access to the information highway.
- CPI encourages the development of community platforms and the linkages between them.
- CPI develops positions on intellectual property rights, copyright and telecommunications regulations and rate structures.
- CPI formally advises the Federal government through its representative on the Information Highway Advisory Council.

3. PROJECT PURPOSE AND OBJECTIVES

The Communications Development Directorate of Industry Canada has determined that the demand for community-based networks/services to address the individual's non-commercial needs is growing. Two of the public access points being considered are the public library and the community information centre..

The objectives of the study are to begin to examine:

- the costs involved in providing a `complete' networked public library and community information centre infrastructure in Canada;
- the costs in making community-based networked services available to all Canadians through the public library and information centre infrastructure;
- the role government could/should play in supporting this approach to networking all Canadians.

This introductory study will:

- initiate the development of a strategy and action plan to `network' all public libraries and community information centres in Canada, and to open this infrastructure, along with select services, to the public.
- begin to identify the operational and capital costs involved in such an initiative, and the possible funding and other support mechanisms to be used.
- include a profile of the public library and community information centre in Canada and its access potential and current readiness to serve as a public access point to the information highway.

4. PROPOSED OUTLINE FOR THE PROJECT REPORT

4.1 A Review of the Public Library and Community Information Centre Infrastructure in Canada.

- background
- current statistics
- state of the art report on current on-ramp services within public libraries and information centres
- review of the electronic content currently available through public libraries and community information centres
- current status of cooperation between community networks, freenets, community information centres and public libraries

4.2 Major Issues to be Addressed and Resolved.

- the pro's and con's of using the public library and information centre infrastructure for public access to the information highway.

4.3 The Goals for a Public Access Program

- translating the concepts of accessibility, affordability, useability and worthiness into specific objectives

4.4 Costing

- identify the costs associated with networking these institutions and making this network accessible to the public, including: hardware, software, line charges, connectivity charges, training, content development and marketing costs.
- identify potential sources of funding to complete the network

4.5 The Role of the Federal Government

- assessment of the options available for a federal government role including:
- policy development
- regulation
- legislation
- tax policies
- grant programs
- operational funding
- training programs
- procurement
- operational funding
- pilot studies
- and the role of the National Library of Canada

4.6 The Action Plan

- recommendations
- the next steps

5. METHODOLOGY, SCOPE AND PLAN

In order to begin to understand the current readiness of public libraries and information centres to act as public access points to the information highway, and to identify an appropriate action strategy, we would propose the following scope and methodology.

5.1 Provincial and Territorial Library Directors Council (PTLDC)

The Coalition for Public Information will work closely with the members of the Provincial and Territorial Library Directors Council in order to obtain specific information as to the current state of library operations and networking in each province and territory. The members of the Council are best positioned to advise us on any developing or imminent library networking initiatives. They will also be able to advise us as to the estimated costs of networking the public libraries in their jurisdictions and the costs of providing public access to these networks. The Council can also identify potential funding sources.

5.2 Council of Administrators of Large Urban Public Libraries (CALUPL)

The Coalition will also work closely with CALUPL to get appropriate feedback on the state of readiness of the largest urban libraries in Canada.

5.3 National Library of Canada

The Coalition will seek specific input from the National Library of Canada to determine the current state of library networking through the National Library and to review the existing and planned linkages between the National Library and the public libraries of Canada.

5.4 Specific Interviews

Specific interviews with various key players involved in public library services and network development in Canada will be conducted. Those interviewed will include representatives of the following:

- National Library of Canada
- The Canadian Library Association
- Association pour l'advancement des sciences et des techniques de la documentation
- Ontario Library Association, British Columbia Library Association and other appropriate library associations
- CANARIE
- Schoolnet
- Telecommunities Canada

5.4 The Coalition's Listserv and Gopher

Because of the size and scope of the project the Coalition will utilize the available Internet technologies to seek further electronic input into defining the role of public libraries in providing public access to the information highway. The Coalition will mount a library survey and discussion paper on the CPI listserv and gopher and use other library and public networks in Canada in order to involve as many stakeholders as possible in developing this report.

6. THE TEAM

The Coalition has identified a team of professionals to direct this study. The team has substantial relevant experience in all facets of the project and have the enthusiasm to work through to the completion of the project.

Our primary team consists of:

Stan Skrzeszewski, Principal
ASM Consultants
411 Rippleton Place
London, Ontario N6G 1L4
Tel: 519-473-7651; Fax: 519-471-9945; E-Mail: sskrzesz@julian.uwo.ca

Gregory Buss
Richmond Public Library
100 7700 Minoru Gate
Richmond, BC V6Y 1R9
Tel: 604-231-6418; Fax: 604-273-0459

Barbara Clubb, Director
Libraries and Community Information Branch
Ministry of Culture, Tourism and Recreation
3rd Floor
77 Bloor St. West
Toronto, Ontario M7A 2R9
Tel: 416-314-7609; Fax: 416-314-7635; E-Mail: clubbb@gov.on.ca

Maureen Cubberley, Deputy Director/Program
Ontario Library Association
100 Lombard Street
Suite 303
Toronto, Ontario M5C 1M3
Tel: 416-363-3388; Fax: 416-941-9581; E-Mail: moorel@gov.on.ca

Serge Lavoie
Director of Operations
The Association of Community Information Centres in Ontario
5233 Dundas Street W., Suite 205
Toronto, Ontario M9B 1A6
Tel:416-237-0405; Fax: 416-237-1395; E-Mail: slavoie@web.apc.org

Jocelyn LeBel
Director
New Brunswick Library Service
Department of Municipalities, Culture and Housing
Sports, Recreation & Libraries Division
P.O.Box 6000
Fredericton, New Brunswick E3B 5H1
Tel: 506-453-3212; Fax: 506-453-2416; E-Mail: nbls@unb.ca

7. Project Schedule

December 23, 1994	Submit Proposal
January 16, 1995	Start Date
January 16-31	Initiate contacts with PTLAC and CALUPL Design data collection tools and interview guide
January 18 - 31	Conduct Interviews
February 1 - March 1	Work with PTLAC and CALUPL to collect and analyze data
March 1 - 14	Prepare Draft Report
March 14	Submit Draft Report
March 28, 1995	Submit Final Report

8. COSTING SUMMARY

It is understood that the Communications Development Directorate of Industry Canada will provide $10,000 to the Coalition for Public Information towards the completion of the study outlined in this response. This sum will be forwarded to the Coalition at the completion of the project. The Steering Committee will approach other stakeholders within the library and information centre community to raise whatever funds that will be necessary to complete an effective and appropriate report.

9. Members of the Advisory Council

Brenda Oziewicz
Head, Library Services
Department of Indian Affairs and Northern Development
1345 - 300 Main St
Whitehorse, Yukon Y1A 2B5
Tel: 403-667-3111; Fax: 403-667-3196; E-Mail: dyrlib@yknet.yk.ca

Hazel Thornton-Lazier
49 Thorncliffe Park Dr.
Apt. 2012
East York, Ontario M4H 1J6
Tel: 416-423-7177; Fax: 416-396-3812

John Tooth
Instruction Resources Branch
Manitoba Education and Training
Box 3, 1181 Portage Ave.
Winnipeg, Manitoba R3G 0T3
Tel: 204-945-7833; Fax: 204-945-8756; E-Mail:jtooth@minet.gov.mb.ca

Virginia Van Vliet
Branch Manager, Brentwood Library
Etobicoke Public Library
36 Brentwood Rd. N.
Etobicoke, Ontario M8X 2B5
Tel: 416-394-5245; Fax: 416-394-5257

Michael Williamson, Coordinator of Networked Services
Information Technology Services
National Library of Canada
395 Wellington Street
Ottawa, Ontario K1A 0N4
Tel: 819-994-6997; Fax: 819-994-6835; E-Mail: miw@its.nlc-bnc.ca

Appendix "D": Bibliography

New Brunswick Library Service. Province-Wide Library Network Plan. July, 1994.

Provincial and Territorial Library Directors Council. Major Public Library Initiatives in Technology-based Resource Sharing and Network Development. December 14, 1994.

Provincial and Territorial Library Directors Council. Presentation to the Information Highway Advisory Council. March 3, 1995.

Skrzeszewski, Stan and Maureen Cubberley. Future-Knowledge: The Report. The Coalition for Public Information. 1995.

Stites, Barbara and Samantha Hastings. Internet Access for Florida's Public Libraries. Tampa Bay Library Consortium, Inc. 1995

14987